# The Feed Bag

SCIENTIFIC FEED MANUFACTURING & MERCHANDISING

JULY 1959

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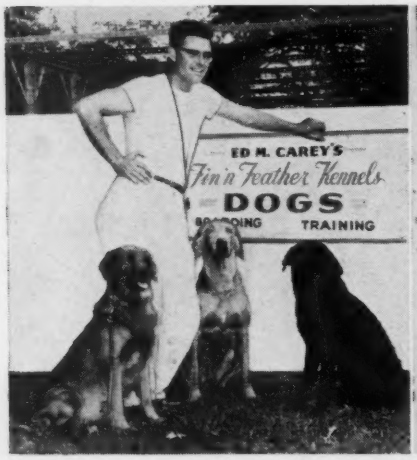

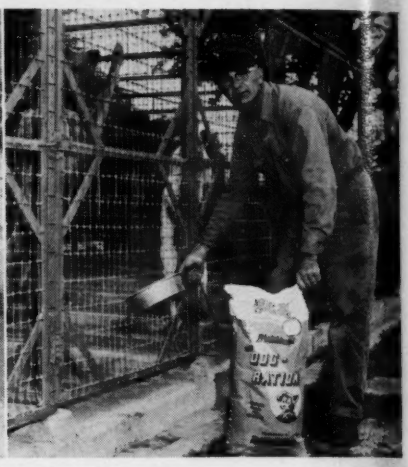


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- ☐ New Fin'N Feather Picture Story Brochures
- ☐ New Dog Ration Feeding Samples

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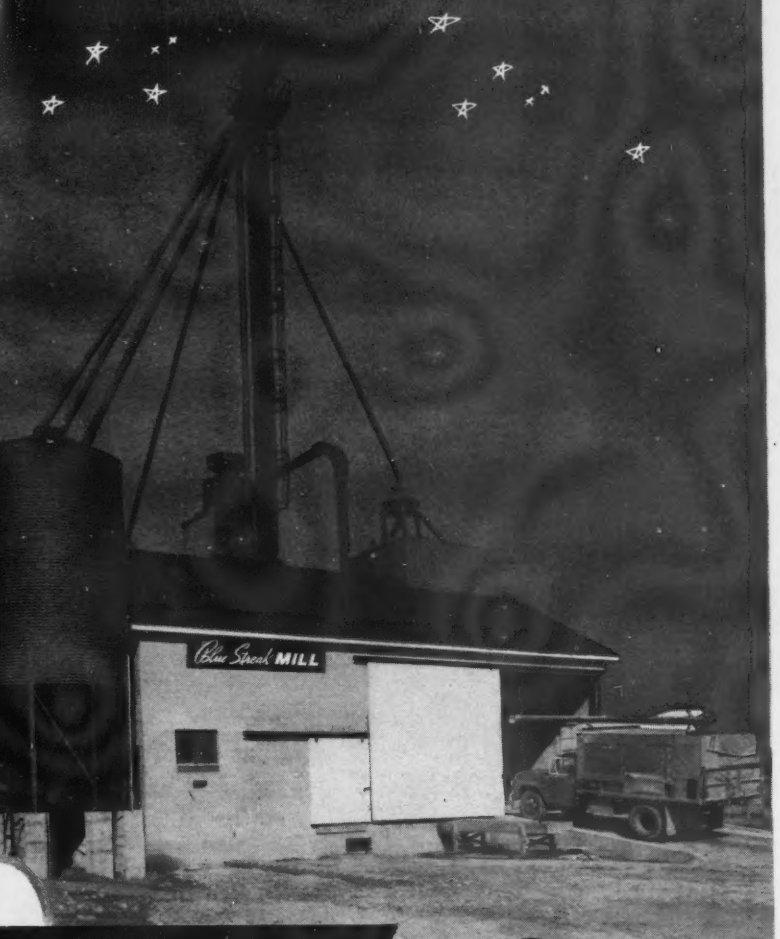


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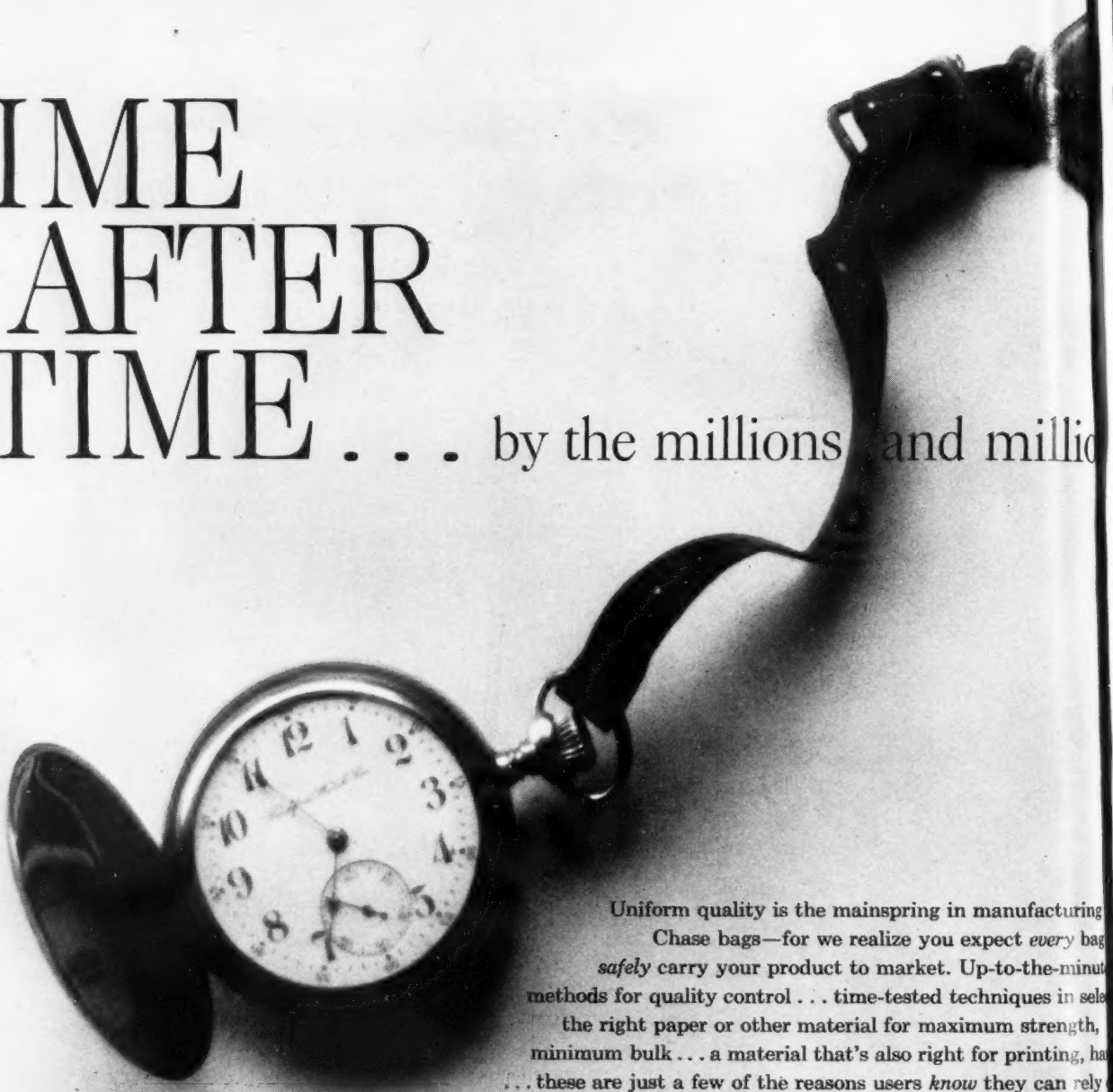

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# The Feed Bag

SCIENTIFIC FEED MANUFACTURING & MERCHANDISING

July, 1959

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*ON THE COVER: This grizzled veteran of swine raising has come all the way from slop feeding to a pig parlor. An Eva Luoma photo.*

## in this issue . . .

**nutrition . . . 7, 64, 76**

Biological assay methods used in checking the quality of commercial chick starter and broiler rations are the theme of a challenging technical presentation by British Columbians Jacob Biely and B. E. March. Five tables complement the text and a lengthy listing of references is supplied. page 7.

Pelleting definitely improves feed conversion by broilers. That is brought out in this presentation by R. P. Mitchell and O. E. Goff of the University of Tennessee, which is accompanied by three tables detailing the results of the authors' comprehensive research. page 64.

How poultry byproducts can be used in fattening rations for steers is the subject of this nutrition report by Maurice L. Ray of the University of Arkansas. Two tables add details to the presentation. page 76.

**production . . . 11**

Here is a detailed report on what is perhaps the country's only large feed manufacturing plant located out-of-doors. The arid climate of Brawley, Calif., offers many challenges to Titsworth Mills management. With eight photos. page 11.

**selling . . . 45**

A strongly-supported dealer organization is credited with much of the success of Burrus Feed Mills, big Texas manufacturing operation. How dealer relations programs are carried on is discussed, along with production and merchandising policies and practices. A dozen illustrations. page 45.

**marketing . . . 78**

There are some bright — and some dim — features in the swine marketing outlook, reports L. H. Simerl, widely-known University of Illinois agricultural economist. He compares production figures on various classes of livestock and points to the growing swine industry of the South as posing a definite challenge to the Corn Belt. page 78.

**departments . . .**


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**THE ALMOST INVISIBLE INGREDIENT**

The portion of a supplement that takes up the least space in the bag often serves the most vital purpose. The vitamins and other micronutrients included in your rations are essential to productive and profitable livestock husbandry. For example, young calves do not possess a functional rumen and cannot produce their own vitamin supplies. They are dependent on the vitamins contained in their concentrates.

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| | Total recommended levels (per ton of feed) |
|---|---|
| **Riboflavin** | **4** Gm. |
| **Calcium Pantothenate** | **12** Gm. |
| **Niacin** | **25** Gm. |
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| **Vitamin A** | **10** million I.U. |
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# MICROINGREDIENTS

***with* THE MERCK MARGIN OF SURETY**

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# Biological Assaying for Quality in Commercial Chick, Broiler Rations

By JACOB BIELY & B. E. MARCH
*University of British Columbia*

**Here is a technical presentation on quality checks of commercial chick starter and broiler rations from two prominent staff members of the poultry nutrition laboratory at Vancouver. Quality-minded members of the feed industry will find this detailed report of great interest.**

The modern trend in the poultry industry is to keep chickens in confinement under highly-concentrated conditions. With this system of management the birds do not have access to the soil, green range, or even floor litter. Generally, a complete ration is supplied, thus simplifying the feeding procedure and reducing the labor involved therein. Those poultrymen who grow their own grain (wheat, oats, barley, corn, milo) or have a convenient source of supply may wish to feed grain supplemented with so-called "concentrates" which contain balanced amounts of protein-rich feedstuffs, minerals, and vitamins. When fed in specified proportions with a grain or mixture of grains, the resulting combination provides all the essential nutrients. By this means the poultryman may effect considerable savings since the utilization of home-grown or locally-available grains reduces manufacturing and shipping costs.

Birds kept in confinement have no access to nutrients other than those supplied in the ration. Any deficiency or excess in one or more nutrients will therefore be quickly apparent either in the form of poor growth, reduced egg production, or poor hatchability of eggs. There is, consequently, a tremendous responsibility on the feed manufacturer to provide rations which are complete in all essential nutrients and at the same time are economically competitive. Rations today have to meet the requirements of birds that have been bred to produce 250 eggs or more per annum and of meat strains which grow to a weight of 1.3 to 1.5 kg. at eight weeks of age. Under Canadian and United States conditions the cost of the feed generally represents 60 to 65 per cent of the total cost of production of eggs and poultry meat. With greater mechanization and cheaper housing, there is every probability that the feed costs gradually will represent an even greater proportion of the total cost of production.

TABLE 1

COMPOSITION OF REFERENCE RATIONS* FED TO THE CONTROL CHICKS IN THE BIOLOGICAL ASSAYS

| Ingredients | Chick starter lbs./ton | Broiler ration lbs./ton |
|---|---|---|
| Wheat (coarsely ground) | 1,117 | 701 |
| Corn (yellow, ground) | 200 | 500 |
| Oats (finely ground) | 100 | — |
| Fishmeal (herring) | 100 | 150 |
| Meatmeal | — | 100 |
| Skim milk (dried) | 50 | 50 |
| Soybean oil meal | 298 | 300 |
| Cereal grass (dehydrated) | 50 | 40 |
| Tallow (stabilized) | — | 60 |
| Cornmeal | 30 | 10 |
| Limestone | 20 | 23 |
| Salt (iodized) | 10 | 10 |
| Manganese sulphate | 4 oz. | 6 oz. |
| Feeding oil (2250A - 300D) | 5 | 5 |
| Butyl fermentation solubles | 20 | 50 |
| Choline chloride (25%) | — | 4 |
| Riboflavin | — | 150 gms. |
| Aureofac A[Reg.] | — | 5 |
| Penicillin | 3 gms. | — |
| Arsenilic acid | — | 90 gms. |

* The Reference rations are used as a standard in comparing results of different assays, and are not necessarily ideal rations.

TABLE 2

AVERAGE WEIGHTS OF CHICKS FED THE REFERENCE CHICK STARTER AND BROILER RATIONS IN BIOLOGICAL ASSAYS

| Test No. | Av. wt. (gm.) at 4 wks. | Av. wt. (gm.) at 6 wks. | Date of Assay |
|---|---|---|---|
| Chick Starter Assays | | | |
| 5411 | 336 | 613 | March, 1954. |
| 5412* | 336 | 615 | March, 1954. |
| | 336 | 604 | |
| 5417 | 342 | 594 | April, 1954. |
| 5421* | 311 | 599 | May, 1954. |
| | 312 | 597 | |
| 5423 | 299 | 547 | May, 1954. |
| 5514 | 330 | 622 | March, 1955. |
| 5529 | 328 | 556 | June, 1955. |
| 5530 | 354 | 530 | June, 1955. |
| Average | 322 | 588 | |
| Coefficient of variation | 16.25 | 16.21 | |
| Broiler Ration Assays | | | |
| 5446 | 372 | 708 | August, 1954. |
| 5449 | 390 | 739 | August, 1954. |
| 5473 | 368 | 730 | December, 1954. |
| 5539A | 398 | 720 | October, 1955. |
| 5547 | 363 | 682 | November, 1955. |
| Average | 378 | 716 | |
| Coefficient of variation | 7.94 | 5.56 | |

* The Reference ration was fed to two duplicate lots of chicks.

### Composition Varies

In the formulation of poultry feeds, a wide knowledge is required not only of the nutritional requirements of chickens but also of the composition of the many individual feeding stuffs which may be utilized. Then, too, the composition of feeding stuffs is not constant. For example, grains may vary in analysis according to location, soil, weather conditions, fertilization, irrigation, etc. Considerable variation may occur in processed feeds (fish meal, meat meal, soybean meal) as a result of differences in the raw material, in the manufacturing process, or in storage conditions. Many of the feed ingredients used are bought on the basis of a guaranteed analysis and must meet specified standards in order to give the feed manufacturer some assurance as to their quality.

Feed formulation has become extremely complicated because of the introduction of a great number of different feed supplements which, although used in small amounts, may markedly affect the results obtained with a ration. The use of antibiotics in poultry feeding has become almost universal. In addition, such additives as arsenicals, sulfa drugs, nitrofurans, hormones, enzymes, and antioxidants are commonly available.

Because of the widespread use of compounds such as those mentioned above it is no longer possible to assess the nutritive value of a ration on the basis of proximate analysis. The Cana-

*(Continued on page 90)*

# You can sell best

## ...and customer satisfaction "comes in Burlap!"

**Have you ever added up the inducements you can offer when you sell sacked feed in burlap? They can help you in selling. Here they are:**

1. *A discount* on every ton of feed, when the mill provides a return-bag program.
2. *Simplified inventory* for the customer.
3. *Identification* for medicated feeds.
4. *Non-separation* of formula-ingredients.
5. *Your prices* are competitive with returnable burlap bags.
6. *Service*...you can give small customers as good delivery service as large customers (and on the same route).
7. *Bulk customers* can be served with bag-to-bulk trucks.
8. *Quantities* can be bought *as needed.*
9. Feed in burlap bags is *sanitary and free from contamination.*
10. *Accurate weights* are assured in a burlap bag.
11. *Fifty-pound* as well as 100-lb. bags can be offered.
12. Farmers have many uses for empty bags...only burlap serves them so well!

**Quite a few selling-points, don't you agree? Next time you're selling a new customer, remember there's a lot to be said for burlap bags!**

***Just ask your own customers—they'll tell you that burlap***

**Is strong** — takes dragging, dropping, *man-handling* — any tough job on the farm.

**Laughs at sudden showers** — wetness or dampness can't weaken it.

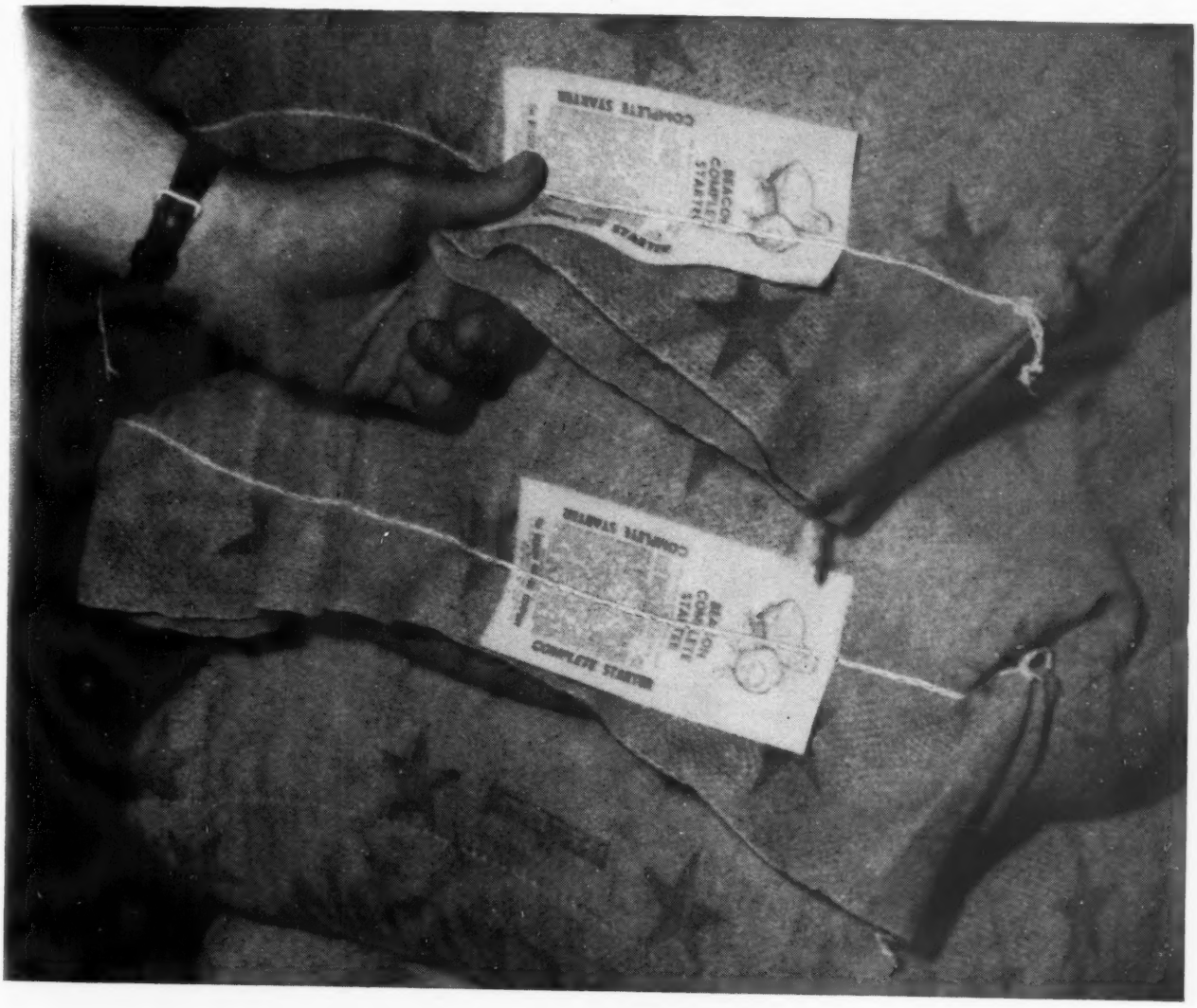
**Saves money** — extra value from re-sale and re-use.

**Gives good ventilation** — keeps farm supplies and products fresh.

**Saves storage space** — stacks to any height without slipping.

**Has 1000 uses** — always in demand on the farm (popular with farm wives, too!)

# what serves best!

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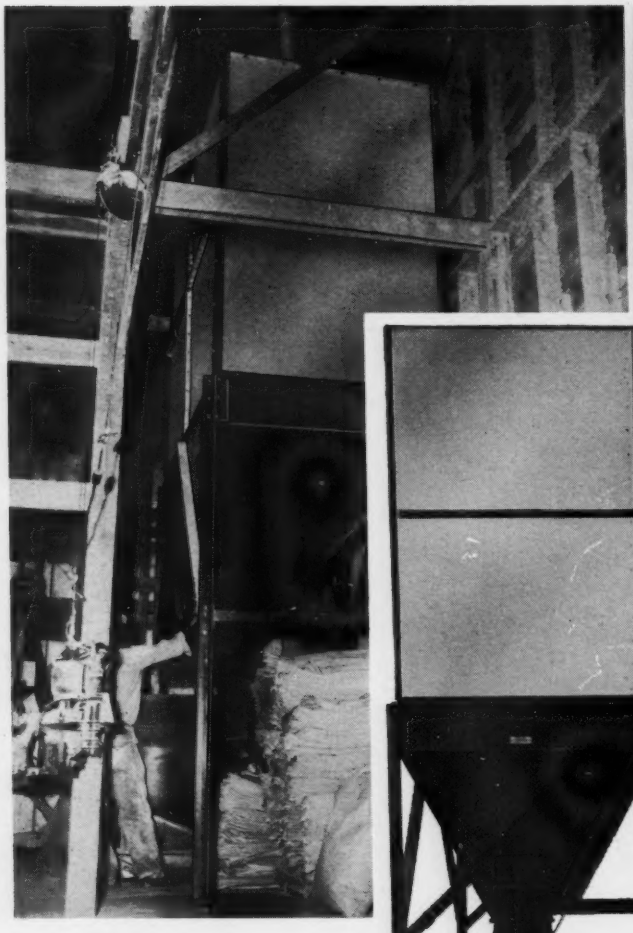
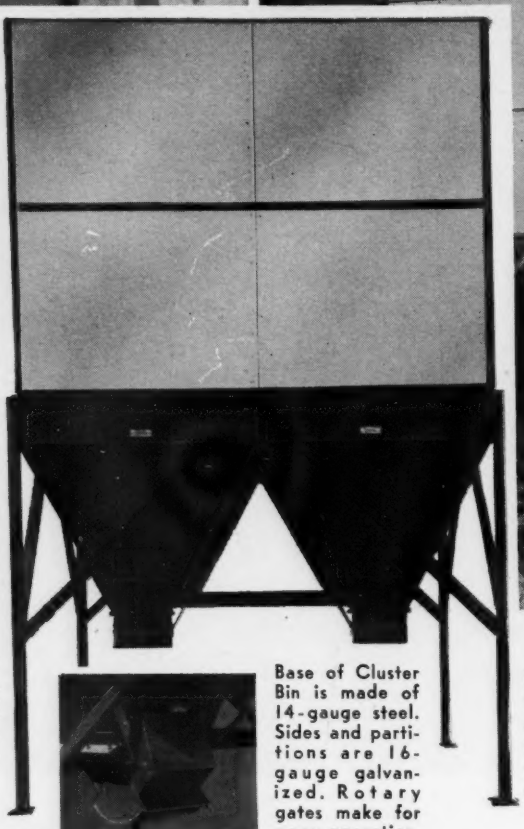
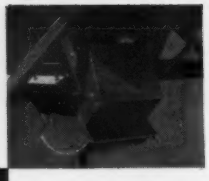
# Lemanco GIVES EXTRA STORAGE

## with prefabricated square bins

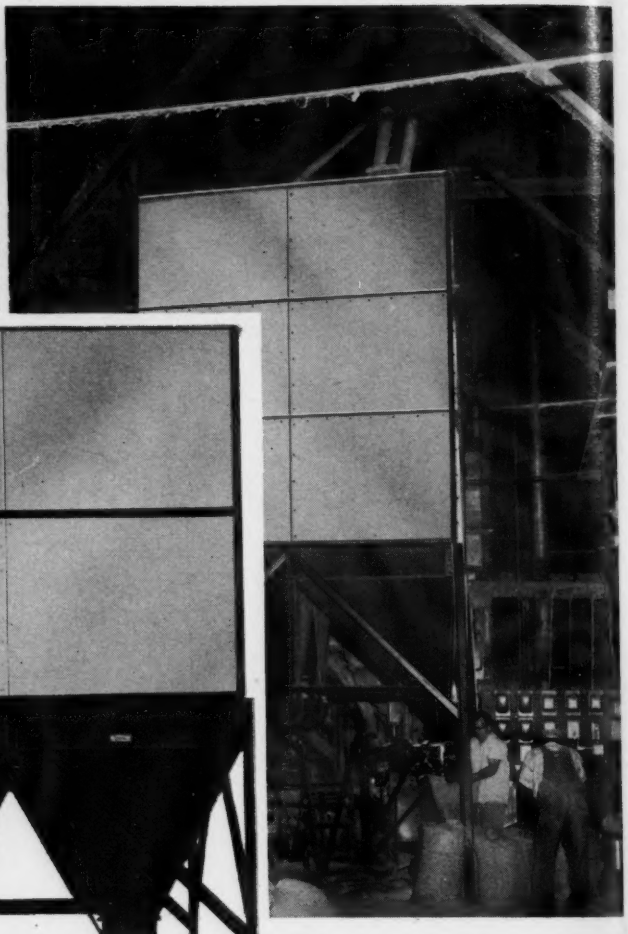


Because of limited space in this mill area a half cluster bin with two hoppers is used to give 10 tons storage of concentrate. Bin is furnished with steel top for air delivery. Many variations of bin and hopper available.





Base of Cluster Bin is made of 14-gauge steel. Sides and partitions are 16-gauge galvanized. Rotary gates make for easy operation.



Cluster bin with 4-foot extension gives storage space of 28 tons utilizing floor area of only 10 feet square. Legs are elevated 18" giving a total clearance under hoppers of 5 feet. Bin used to store crimped oats and cracked corn.

Versatility of this storage bin is demonstrated showing weigh buggy under rotary gate and a bag-out scale set to pivot under all four hoppers. Slide gates for latter operation can be provided.

## 20-TON CLUSTER BIN FOR FEED MILLS

Need more storage? Look around your mill for those odd spaces not being utilized. Ten chances to one a LEMANCO all-steel bin can be fitted into your operation.

Illustrated is the 20-ton Cluster Bin having four 5-ton compartments to carry four different ingredients. Each compartment has two 60° angles and one 45° angle. The front is practically vertical, which means that most any type of feed will flow with ease.

The bin, 10 feet square, has an overall height of 16½ feet, which can be reduced, if necessary, by ordering shorter legs. Standard clearance underneath the rotary gates is 42 inches. This can be increased by blocking up. Sides and partitions can be extended to roof provided listed capacity is not unduly increased.

Other Lemanco bin models can also be used to good advantage in mill operations.

*For further information write or telephone*

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# Fresh-Air Feeds Manufactured Out-of-Doors in California

**Flexibility and diversification have been the keys to success in the more than a quarter of a century Titsworth Mills, Inc., has operated in California's Imperial valley. And the growing Golden state concern has faced and solved many varied problems in this below-sea-level area.**

By PAUL B. NEES
*Reported From Brawley, Calif.*

Actually a desert area, its soil is so fertile under irrigation that Imperial valley has become famous as one of the nation's major centers of food and grain production. The land yields an abundance of vegetables, melons, fruit, grain, alfalfa, cotton, and other farm products. In many cases the rich soil produces two crops a year.

Despite its long growing season and freedom from worry about rain, the valley has its seasonal disadvantages, as does any other area. Here, it is the extremely hot summers that take a toll from man and beast.

As a consequence, the feed business in the valley is spotted and seasonal. Success requires a wide diversification of activities, and ingenuity and flexibility in operation. Titsworth Mills offers an excellent example of these qualities.

The Titsworth milling business was started at Westmoreland, Calif., in 1933 by Lewis Titsworth. In 1940 he also opened a grain storage and handling plant at Brawley, which is seven miles from Westmoreland.

Brawley is now the firm's headquarters, but the mill at Westmoreland is still operated. Batch mixing is done at the Brawley plant, while pelleted feeds are manufactured at Westmoreland.

Lewis Titsworth was active in the management of the business until his death in 1957. Now, four of his sons and one daughter take an active part in the operation of the milling corporation.

### Executives of Firm

The roster of officers at Titsworth Mills, Inc., is as follows:

President, Phil Titsworth
Vice president, Richard Titsworth
Treasurer, Jack Titsworth
Secretary, Mrs. John Cook

Mrs. Cook is a sister of the others. David Titsworth, the fourth brother, is manager of the pellet mill at Westmoreland.

Since its founding, Titsworth Mills has operated continually with a great deal of flexibility. It has extended activities in various directions, and altered them to fit changing needs of the area.

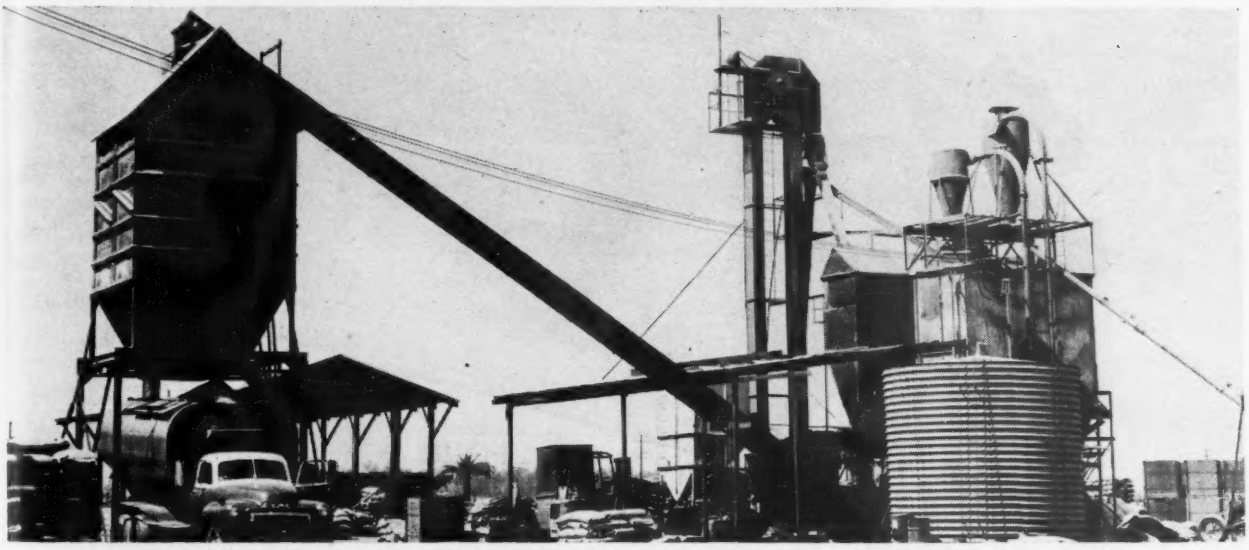
### Changes Many

The firm's feed operation has undergone numerous changes from time to time. These have been motivated by changing conditions in the area, elimination of unprofitable procedures, and substitution of methods better designed to work to the advantage of the company and its patrons.

For instance, in 1952 Titsworth Mills secured the Purina franchise for Imperial county. A retail store was opened in Brawley that same year. The following year a second store was opened in El Centro, 15 miles from Brawley.

However, the stores did not prove profitable. As a result, the one in El Centro was closed after three years of operation, and the Brawley store was closed in 1958. Titsworth Mills retains the Purina franchise, but instead of selling mixed feeds, sales are now principally Check-R-Mix concentrates, which are custom mixed by the mills.

"The unprofitable volume of the stores was due principally to lack of poultry operations in the area," Jack Titsworth explained. "The hot summer months here are very hard on

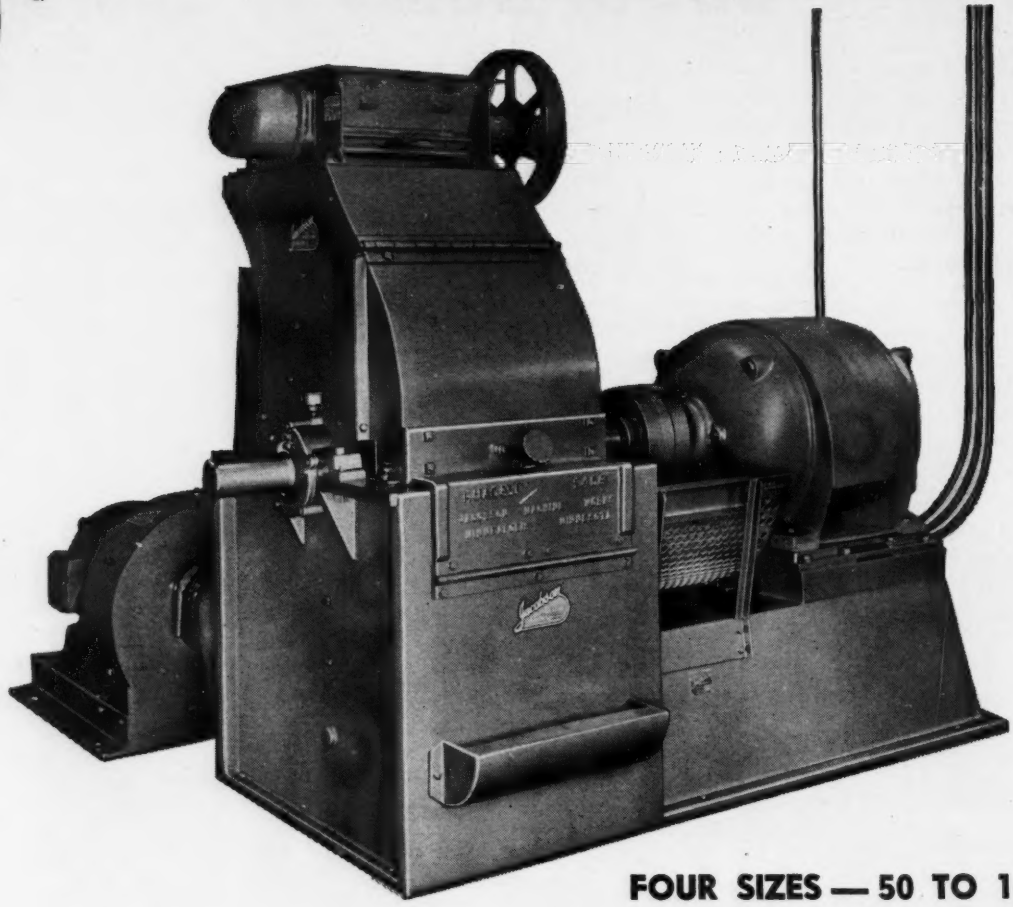


ARID CALIFORNIA WEATHER PERMITS FEED MANUFACTURING TO BE CARRIED ON OUT-OF-DOORS.

Jacobson QUALITY

# AJACSOMATIC

## REMOTE SCREEN CHANGE HAMMERMILL



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*49 Years of Continuous Service to the Feed Industry*

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poultry. For that reason, we have no big poultry raisers and mighty few small ones.

"As any one in the industry knows, poultry supplies make up a large part of the sales of the average farm store," he commented. "Our sales of both poultry feed and supplies were very low, so we decided to eliminate the stores."

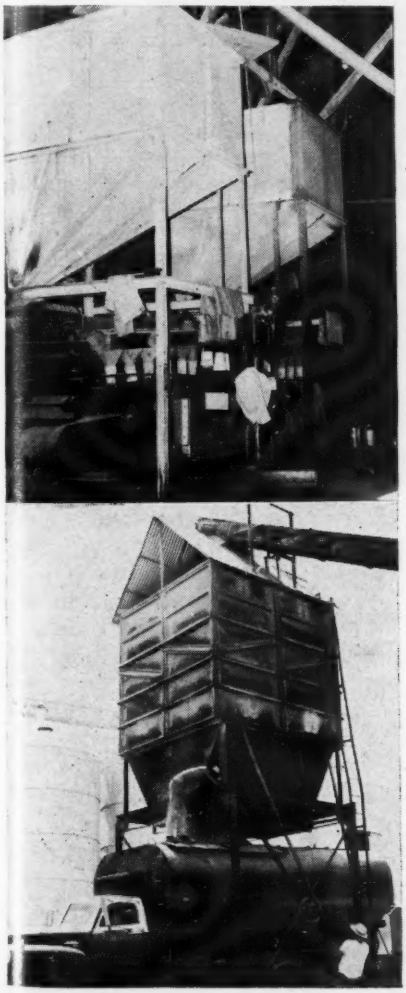
### Custom Plant

The feed milling is almost entirely a custom grinding operation now. Together, the two mills have a capacity of approximately 125 tons of feed daily. At this writing, the Brawley mill prepares most of the cattle and hog feeds, while the Westmoreland mill is largely engaged in turning out pelleted sheep feed.

The sheep feeding operation has been the subject of much research in the past few years, and it has taken on considerable stature.

### Pellet Plant

The pellet mill now is furnishing pelleted feed for from 10,000 to 12,000 sheep. Because of the Imperial valley's mild winter weather, sheep ranchers of Utah, Idaho, and Colorado send their sheep here for wintering. The herds are put to pasture on lush alfalfa fields.



SEED cleaning is an important element in the Titsworth Mills operation at Brawley, Calif. Some of the seed units are pictured here. Bulk feed loading, lower photo, is carried out some distance from the main feed plant. Ample room for easy truck movement is provided and there is plenty of parking area for vehicles waiting their turn.

RICHARD, JACK & PHIL TITSWORTH OF CALIFORNIA

However, there is regularly from 10 to 20 per cent of the herd that fails to fatten on the alfalfa as fast as the rest. Formerly, the herd owner might be kept in the area several weeks waiting for these laggards to fatten out for market.

Now, pelleted feed has taken over. Animals which fail to gain weight like the others are culled from the herd, penned, and fed a complete pelleted ration. As a result, the herd all fattens out and is marketed at the same time. The herdsman can then return north without further delay.

### U of C Helps

The University of California has an agricultural experiment station in Imperial county. It has been most helpful to Titsworth Mills in developing the pelleted sheep ration.

"In the recommended ration the pellets are 60 per cent roughage, 40 per cent concentrate," Mr. Titsworth stated. "We mix the feed to suit the feeder, though, and many want a higher per cent of concentrates, to hurry things along.

"Extensive experiments have demonstrated the value of pelleting the sheep ration," he said. "Sheep gain half again as fast on the pellets as they do when the same formula is fed without pelleting."

The Imperial valley produces no grasses suitable for the roughage in the pelleted ration. Instead of importing them, a satisfactory roughage content has been developed by combining alfalfa hay with straw. This balances the cost and gives desirable results.

The sheep feeding project is naturally quite a seasonal one. At times it more than taxes the capacity of the pellet mill. For emergency purposes, a storage stock of up to 80 tons of pellets is maintained. This storage is in 100-pound burlap bags, on pallets

### Beef Rations

Titsworth Mills is also at this time mixing feed for 2,500 cattle daily. This is mixed at the Brawley plant and delivered in bulk.

The feed milling setup at Brawley is unique in that it is an outdoor operation, made feasible by low rainfall and absence of cold weather. Grain is ground by a Wieco hammer mill and the feed is mixed in a two-ton ribbon type batch mixer.

A one-ton Burton mineral mixer also plays its part in the formulation of feeds. When mixed, the feed is conveyed by elevator leg to a high loading bin, some distance away, where the two large bulk delivery trucks are loaded by gravity. Deliveries are 100 per cent in bulk.

The mills also make quite a sizable amount of hog feeds, both mash and pellets. This phase of the operation is growing steadily, due to an increasing hog population in the area.

The Westmoreland mill has a Moore Dry Dock barley roll, a paddle-type continuous-flow mixer, California pellet mill, and Wieco hay reduction equipment.

The feed milling setup at Brawley will undergo considerable change in

(Concluded on page 18)

# For well-balanced nutritive feeds

## MIX

# PRODULAC

CORN DISTILLERS SOLUBLES WITH GRAINS

BOTH GRAIN FERMENTATION PRODUCTS

# NADRISOL

CORN DISTILLERS DRIED SOLUBLES

These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

## NATIONAL DISTILLERS PRODUCTS COMPANY

GRAIN PRODUCTS SALES • 99 PARK AVENUE, NEW YORK 16, NEW YORK

(Advertisement)

## A PELLETED VIEW
### Of the News

It's been truly said that it's a good thing we don't get all the government we're paying for. One can but wonder if we couldn't get even a little less government for our money. Seems like the government hates to let go of a program after it has its teeth into it. Notable among the successes in government programming has been the farm price support program. The political punditry behind this experiment has been a successful and continuing political effort to persuade an important part of our population that it can continuously produce more than it can sell and that big government stands between it and economic reality.

**More Supports**

There is evidence that the political viewers with alarm are now getting ready to "protect" the broiler and egg producer with a government program. Prices of nearly everything have doubled since 1946. But "government supported" farm prices have declined, and these low prices for grains have rubbed off on the rest of the agricultural economy. None of us (except politicians) can continuously produce more than we can sell. We believe that little children should learn at their father's knee to avoid overproduction like the plague no matter what certain politicians say.

**Discourage Overproduction**

We hope that the cloud nine economic approach to the serious problems of the poultry industry will not prevail — that the government will not step into the broiler and egg picture and permanently freeze the poultryman into his present unsatisfactory condition. We in the feed industry have an equal responsibility not to encourage overproduction and to keep sight of the fact that feed sales are not as important as the economic health of our neighbors and customers.

*The Wengers*

Phone 111 Sabetha, Kansas

© 1959, WENGER MIXER MANUFACTURING

# Pulse of the Industry

By ELDON H. ROESLER

SIGNALS OF DANGER AHEAD!

The warning signals are up! Little by little feed manufacturers, in their search for tonnage, are falling into bad habits.

Not long ago we heard of one feed manufacturer which went back to the old gimmick of selling feed guaranteed against price decline.

Some manufacturers are furnishing bulk feed bins to their dealers to be put on farms and elsewhere to assure feed tonnage.

Both these practices are as bad or worse than indiscriminate financing. We believe that permanent bulk feed bins should be the dealer's property and should not be used by the manufacturer as a means of taking away the retailer's independence.

We have seen other industries faced with this type of selling over the years. Not too long ago the ice cream manufacturing industry was on a binge which involved furnishing larger retail ice cream cabinets in order to steal business from each other.

The breweries have gone through a period where they furnished outlets complete bar equipment and furniture. In this field the practice became so dangerous, each brewery being played against the other by the retailer, that the industry finally had to resort to legislation to control the problem in many states.

Some states now have laws regulating the furnishing of ice cream cabinets to retailers.

Let's hope the manufactured feed industry sees the light before this problem of free bulk bins, prices guaranteed against decline, and other malpractices get out of hand.

Such practices hurt not only the manufacturer but also the retailer of feed since it ties him up in such a manner as to prevent his freedom of action.

The Sales Executive council of the American Feed Manufacturers association will be meeting late in September in St. Louis. Let's hope that these sales leaders of our industry review these policies and join hands in sincere action to control and eliminate such practices where desirable.

SUDDEN
SERVICE

*TO ANY PART OF THE U. S. A.*

●

BEET PULP
MALT SPROUTS
MALT CLEANINGS
MALT HULL FEED
BREWERS GRAINS

●

WHEY POWDER
BREWERS YEAST
CULL NAVY BEANS
CRIMPING BARLEY
GRINDING BARLEY
HOMINY FEED

●

**LA BUDDE**
MILWAUKEE, WIS.

## Pulse of the Industry

The feed manufacturing industry is on record regarding the recent order of the Food & Drug administration on drugs in feeds. The industry was put on record through a statement of the American Feed Manufacturers association; the statement was presented to George P. Larrick, FDA commissioner, on June 18, 1959.

The AFMA calls attention to previous FDA statements which seem to contradict present policy. On May 30 the government agency announced that it would refuse any new supplemental drug applications covering the use in feed of diethylstilbestrol, dienestrol diacetate, and arsenic-containing compounds.

The AFMA points out the change in attitude by referring to the following question which was submitted to FDA at the food additives discussion in Washington, D. C., Nov. 24-25, 1958. This was the question:

"What action, if any, is required under the new law for a drug which already has an effective new-drug application under the food, drug & cosmetic act and which is being used by addition to animal feed?"

Here is the FDA answer:

"Veterinary drugs which are used in accordance with a new-drug application made effective before Sept. 6, 1958, do not require attention under the food-additives amendment. The safety of any residues from these drugs was considered at the time the new-drug application was before us and the prior sanction given their use through the new-drug application exempts them from coverage of the food-additives amendment."

In addition, Dr. Albert H. Holland, at the symposium Jan. 23-24, 1956, stated that after a study of many months it had been concluded that "diethylstilbestrol as proposed for use in cattle feed was perfectly safe."

The Delaney amendment is the culprit in this trouble. As passed by congress, it prohibits any ingredient in animal feed that can cause cancer in man or animal. The FDA is enforcing this amendment in a stringent manner; before these drugs were approved extensive work was done to prove that none of these drugs remained as a residue in the tissue of animals.

Present FDA policy is unfair since it prevents any firm which wants to make a competing feed from incorporating these drugs while others who have prior applications can use them.

The AFMA's role as a spokesman for the feed manufacturing industry is really pointed up by their handling of this matter. Whatever can be done to clarify this all-important problem is being done now by AFMA, leader of a large industry.

# Leaders Don't Follow!

. . . they just keep going ahead — like the RAY EWING Company's recent announcement of its new Electronic Computer Formula Service for the Feed Industry.

This leadership, which pioneered the concentrated dry vitamin premix . . . which developed the first fermentation product with a guaranteed potency produced primarily as a growth stimulant . . . which perfected the first uniform product for broiler pigmentation . . . was looked to for the inevitable use of the Science of Electronics to increase speed and improve efficiency in computing feed formulas.

More and more leaders in Feed Manufacturing are combining Ray Ewing Nutritional Service and Ray Ewing top quality products with their own proven production know-how to supply the feeds of the future for the flocks and herds of today.

THE Ray Ewing COMPANY

2690 E. Foothill Blvd.
Pasadena, California

AMES, IOWA
FORT WORTH, TEXAS
COUNCIL BLUFFS, IOWA
LANCASTER, PENNSYLVANIA

## —Titsworth Mills

*(Continued from page 13)*

the future. Plans call for the expansion of feed mixing facilities, and the addition of pelleting.

### Seed Volume

Grain and seed handling and cleaning is a major part of the Brawley operation. Equipment used for these purposes includes a Monitor receiving seed cleaner, Clipper seed cleaner, and Hart-Carter disc seed cleaner.

The number on the payroll varies some from season to season. The present force of 23 is about midway between the norms of 16 to 30 employes.

Elimination of the stores and regular delivery routes, together with other changes in operations, naturally effected labor and operating economies. However, employes affected by the changes have been reshuffled, rather than turned adrift.

### Association Leaders

The Titsworths take an active part in work for the good of the industry. Phil has served on the board of directors of the California Certified Seed association. Dick has been a director of California Hay, Grain & Feed Dealers association, and was the original general chairman of Cattle Call, an area livestock show.

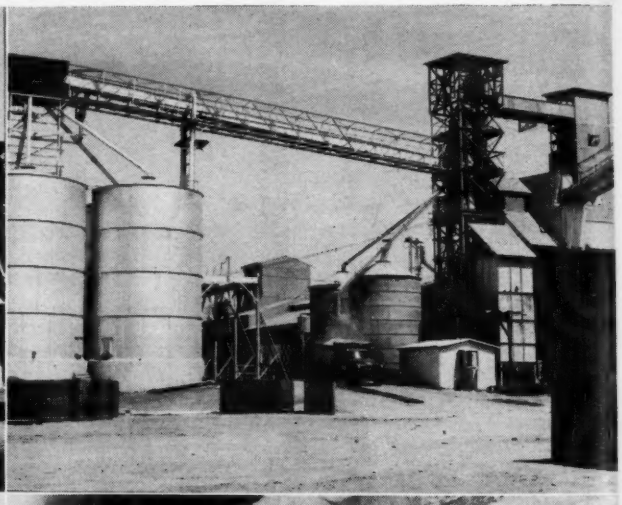
The firm is also a member of the California Cattlemen's association, and the Certified Alfalfa Seed council. It is an associate member of the Arizona Hay, Grain & Feed Dealers association.

The Titsworths are their own field force. All get out in the field frequently, contacting farmers and stock growers and selling the services of the firm. Little advertising is done, the personal contacts being relied on for developing sales and good will.

Titsworth Mills sometimes takes what are apparently backward steps, such as the closing of its feed stores. However, closer examination invariably shows that such moves result in a better profit ratio.

**Such sound judgement has sparked the growth of Titsworth Mills, Inc., in the past quarter of a century. There is every reason to believe that it will continue to chart the course toward further growth and success over the years ahead.**

**STEEL grain and ingredient storage tanks at Titsworth Mills, Brawley, Calif., are shown immediately below. At top right is an overall view of the production setup. Below left, concrete is poured for a new 17,000-square-foot warehouse addition. Warehouseman Julio Zunigo checks the inventory of sheep pellets. In peak season, rations are provided for 10,000 to 12,000 sheep.**



## Sales Staff Is Expanded At Westvaco Multiwall

Appointment of the following to its multiwall bag sales staff has been announced by West Virginia Pulp & Paper Co., New York City:

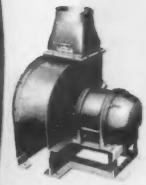
Eugene Revelle, Colorado, Wyoming, Utah, and Idaho; Lawrence M. Donovan, Georgia; Raymond F. Fagan, Kentucky and Tennessee; and C. B. Danielson, Atlanta, Dallas, and New Orleans districts.

INCREASE YOUR PROFITS WITH

# KELLY DUPLEX

## DEPENDABLE MILL EQUIPMENT

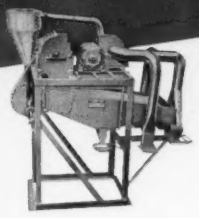
**They give you top service and economy!**



Grain Blower & Exhaust Fan

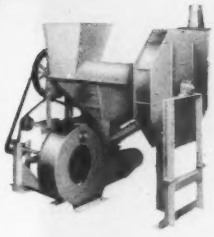
Vertical Screw Elevator

Cob Crusher for making Poultry Litter

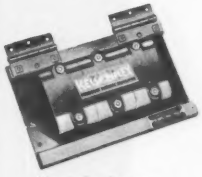


Corn Cutter and Grader with Aspirator

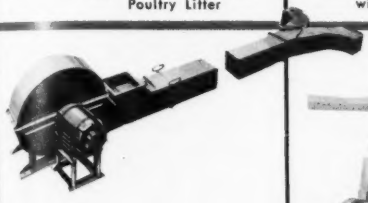
Vertical Feed Mixer ½ to 5 tons



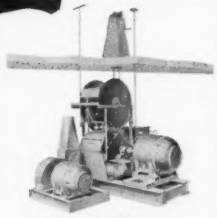
Corn Sheller with blowers for grain and cobs



Magnetic Separator protects mill machinery



Forced Air Carloader with motor or belt drive

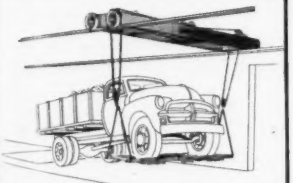


Remote Change Hammermill

Twin Molasses Mixer

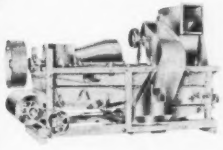
Corn Scalper with or without air cleaner

Chain Drag in double and single geared types

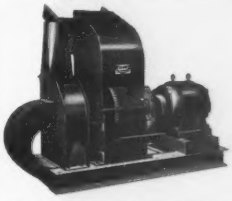


Electric Truck Hoist cuts handling costs

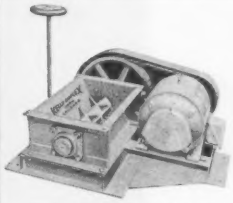
Portable Screw Elevator



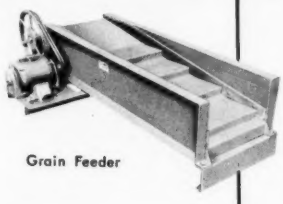
Combined Sheller-Cleaner



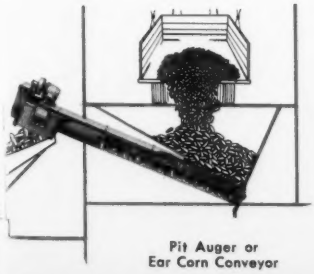
Instant Change Hammermills 12", 16", 20", 24" sizes



Finger Type Corn Crusher and Feed Regulator



Grain Feeder



Pit Auger or Ear Corn Conveyor

## The Duplex Mill & Manufacturing Company Springfield, Ohio

**✓ Check Here!**

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

NAME _____ TITLE _____

FIRM _____ TEL. NO. _____

CITY _____ STATE _____

☐ Information on Free Mill Planning and Layout Service

Mail this Card — No Obligation

KELLY DUPLEX

- ☐ Hammermill
- ☐ Pit Auger
- ☐ Chain Drag
- ☐ Corn Crusher—Regulator
- ☐ Vertical Feed Mixer
- ☐ Twin Molasses Mixer
- ☐ Vertical Screw Elevator
- ☐ Portable Screw Elevator
- ☐ Bucket Elevator
- ☐ Electric Truck Hoist
- ☐ Corn Sheller with Blowers
- ☐ Regular Corn Sheller
- ☐ Pitless Corn Sheller
- ☐ Combined Sheller-Cleaner
- ☐ Gyrating Cleaner
- ☐ Corn Scalper
- ☐ Corn Cutter and Grader
- ☐ Cob Crusher
- ☐ Electric Bag Cleaner
- ☐ Forced Air Carloader
- ☐ Magnetic Separator
- ☐ Grain Feeder
- ☐ Grain Blower
- ☐ Complete Line Catalog

# KELLY-DUPLEX HAMMERMILLS

*A complete line . . . to handle any grinding problem!*

## REMOTE SCREEN CHANGE HAMMERMILL

Whether you are interested in speed, convenience, economy, capacity or quality of grind . . . it will pay you to investigate the Kelly Duplex Remote Screen Change Hammermill.

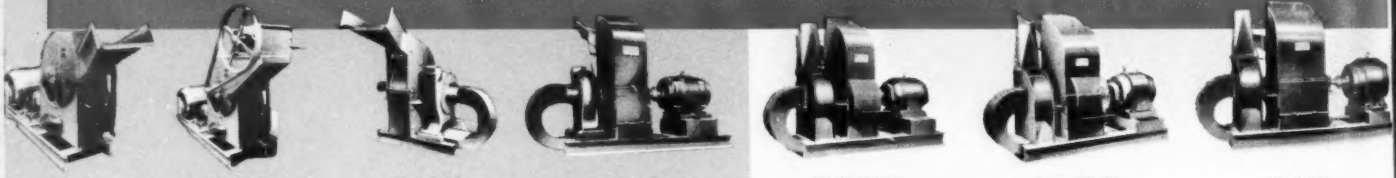
Here are just a few reasons why: ● Screens can be changed instantly by a single turn of a crank . . . without stopping the mill . . . and without leaving the service floor ● Torn or clogged screens, regardless of the amount of damage, can be quickly and easily removed and replaced without costly downtime ● Mill is guaranteed to grind more grain with the same power than any other make—or your money back ● Special intake arrangement assures a clean, uniform product of granular texture . . . mill does not whip feed into a floury dust ● Has 20" throat—delivers high capacities ● Built low to floor . . . gives you a larger pit area ● Separate blower keeps mill clean at all times ● Heavy steel construction throughout assures top performance and long life under hardest use.

Make your own "point-for-point" comparison. Mail card today for literature and full details. See for yourself how much more you get with a Kelly Duplex Remote Screen Change Hammermill . . . and how much more it will do for you.

## TOP PERFORMANCE GUARANTEED

***We unconditionally guarantee that any Kelly Duplex Hammermill will grind more feed with the same power, conditions being equal, than any other hammermill on the market. If you are not completely satisfied, you are free to return the machine within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price.***

## LOOK AT THIS WIDE RANGE OF FRONT AND SIDE SCREEN CHANGE HAMMERMILLS



**Model LT**
12" screen
30 to 50 HP

**Model L**
12" screen
30 to 50 HP

**Model KT**
12" screen
30 to 50 HP

**Model M**
16" screen
40 to 75 HP

**Model M-10**
16" screen
75 to 100 HP

**Model K-20**
20" screen
75 to 125 HP

**Model S**
24" screen
75 to 125 HP

VIA AIR MAIL

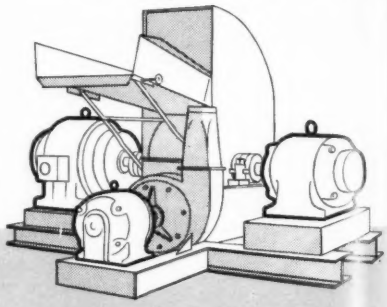
FIRST CLASS
PERMIT NO. 72

SPRINGFIELD, OHIO

**BUSINESS REPLY CARD**
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

POSTAGE WILL BE PAID BY

**THE DUPLEX MILL & MFG. CO.**
**SPRINGFIELD, OHIO**



## Multi-Motor HAMMERMILL

Kelly Duplex Multi-Motor Hammermill give you efficient grinding the momen you start the machine. Starting powe requirements are greatly reduced. In vestigate these hammermills. Send in th card today and we will send you com plete information immediately.

# How Advertising Returns Manufacturer, Retailer Far Above What It Costs

**It pays to advertise — and it hurts your sales volume if you do not. This is the key point Market Analyst McKenzie makes this month and he backs it up with solid facts based on field survey work. How do your operation and your advertising expenditure compare? Mr. McKenzie will welcome information on the advertising experiences of The Feed Bag's readers.**

By DUANE F. MC KENZIE
*The Feed Bag's Survey Expert*

Everybody has heard of the law of supply and demand. Everybody knows that there is no more sold than is in supply, and that eventually supply evens itself to equal demand.

The common conception of the law is that supply follows demand.

In a recent case, a manufacturer called me in and told me his product wasn't going well. It was an excellent product, well-priced, and certainly useful to the farmer. Any dealer handling this product could easily make money on it, as the manufacturer offered a discount schedule of 40-20-10. Any article with a 40 per cent margin should be attractive to anyone wishing to make a profit. Investment was small; the manufacturer even offered to put it into the dealers' hands on full consignment with no penalty for the consignment feature.

The manufacturer tried several ways to merchandise his product. He went through jobbers in some areas, used manufacturers' representatives in others. He sent his own sales people to dealers in some areas, and in other areas he sent his sales people direct to the farmer.

After interviewing all sales managers, several jobbers, manufacturers' representatives, and advertising people, I requested permission to carry on a broad experiment on this product.

### Field Interviews

We went to 100 dealers and asked about the product. Of the 100, only 31 had heard of it, and just four stocked it. Some requested that they be put on consignment for the product.

These 100 dealers were scattered throughout five western Great Plains states, through Iowa, Minnesota, and into Illinois.

Most of the dealers interviewed, however, stated that they had not too much confidence in the sales potential of the product because they hadn't had any calls for it.

We then went a step further and asked 300 farmers in the same regions if they would be interested in such a product. We showed pictures to some. Others we showed the product itself. The farmers were keenly interested. They felt that the $5 product was well worth it, and many wanted to know where they could get it. Only three had heard of or had seen it. All three had been sold by salesmen. All three had the product.

There must be supply before demand and the end customer must be told about the product before he can want it.

### Test Setup

Our experiment was then designed to be held in three areas. The three areas picked were similar in terrain and in most other respects. We determined that potential sales were similar and where differences occurred, we adjusted accordingly.

Overall, our manufacturer began the experiment with full-page advertisements in national farm magazines. The experiment was designed to take place in the month of May.

Prior to the release of the large ad campaign, we contacted 30 dealers in each area who were willing to go along with the experiment.

The three areas were far enough separated so that local and statewide advertising would not overlap.

DUANE MC KENZIE

In area I, we had spot commercials three times a day for 15 days on all local radio stations, telling about the product. The farmer was told to see his dealer and ask about the product.

In area II, no radio was used, but state newspapers had full and half-page ads through the campaign. Pictures of the product were shown — a usage story was told. The ad suggested that each farmer contact his dealer.

In area III, no large media were used.

In each area, the 30 dealers were divided into groups of 10 each — checkerboarded so as to disperse them throughout their area.

### Local Advertising

One group of 10 in each area was asked to use $100 to advertise the product. Some were told to use local newspapers, some to use handbills — others were told to use any way they

*(Concluded on page 24)*

Volumes could be written—and have been written—about the amazing number of important nutritional elements present in the best grade of dehydrated alfalfa. Even a superficial study reveals that these numerous essential elements would be prohibitively costly if bought individually.

When you specify Small's Dehydrated Alfalfa, you get *all* these extra values in full measure, for A-D-M goes to extra expense and pains to insure that the product delivered to your door contains all the basic nutritional values of alfalfa in the field. May we tell you in more detail why Small's Dehydrated Alfalfa belongs in *your* feed? . . . and why it continues to be the first choice of value-conscious feed manufacturers everywhere?

**Archer-Daniels-Midland Co.**

ALFALFA DIVISION

P. O. Box 356 Kansas City 41, Mo.

# Washington Millwheel

ERNEST W. ALWIN, Editor

*Mr. Alwin is recognized as one of the best-informed newspapermen covering agricultural and political subjects in the capital today. He is the winner of two Sigma Delta Chi awards for proficiency in journalism.*

VOL. XV NO. 7 Washington, D. C. JULY, 1959

# Idle Land Future Is Uncertain

There has been an increasing number of predictions from members of congress that, while existing contracts will be honored, the conservation reserve program will not be extended next year.

Some 23 million acres of cropland have been idled under the program so far, and another five million probably will be signed up for the coming year. But congress is coming around to the conclusion that it has two choices: either expand the program greatly or discontinue it altogether.

Virtually every expert who has studied the conservation reserve has estimated that at least 40 million acres of cropland would have to be taken out of production to really have an impact on the surplus situation. Some have said 60 million acres. Some have put the figure as high as 80 million.

Congress is in no mood to okay a vastly bigger program. Cost is one cooling consideration. Complaints from businessmen in small towns in rural areas form another.

## *'No-Stand' Policy of Ike Is Questioned*

President Eisenhower's statement that he will take no stand in the selection of a GOP presidential nominee next year has met with considerable skepticism in Washington.

The capital thrives on politics, of course, and it is inconceivable to many that Mr. Eisenhower means what he says, or that he will be able to hold to his resolve under all the pressures that are bound to develop.

The skepticism springs in large part, however, from the strong stand the President has taken on fiscal issues. He is fighting as never before for a balanced budget and against big spending programs. That he has taken these issues to heart seems abundantly clear.

All of which leads to this question: Would he remain aloof if it appeared that a serious contender for the GOP nomination was not in sympathy with his policies in the fiscal field? Or, would he try to swing the nomination, overtly or otherwise, to a candidate in whom he had confidence?

It may well be that Mr. Eisenhower feels the course his administration has charted would be followed by all of the potential nominees he has in mind. But suppose, if a fight for the nomination develops, he begins to have doubts. Then would come the test of his neutrality.

## *Delaney Amendment FDA Headache*

The Food & Drug administration's interpretation of an amendment relating to the use of chemicals in feed is an example of how involved things can get in Washington, and how inconsistent.

The FDA has said it will not approve any new applications from feed manufacturers who want to use stilbestrol in cattle feed. Arsenic compounds which are used to promote the growth of poultry are under the same limitation.

But feed manufacturers who have been cleared by the FDA to use stilbestrol in feed, however, can continue doing so for the present. The FDA says it is studying the situation and will decide whether to revoke their clearances.

Responsible for the problem is the so-called Delaney amendment approved by congress, which says in effect that chemical additives that are cancer-inducing cannot be regarded as safe. Stilbestrol has a cancer potential, but the FDA has approved its use on the basis of tests that showed that it was safe for use in feed. It left no residues, or if it did, the residues were so minute they were insignificant.

The FDA isn't pleased with the situation and is looking for a way out. It's hoping the matter will be resolved by congress or, possibly, the courts.

It hardly seems conceivable that feed manufacturers would be barred from the use of stilbestrol. It has been estimated that about 90 per cent of the cattle sent to market today are raised on feed in which stilbestrol is added.

## *Foreign Aid Program Due for Trimming*

Congress is almost certain to trim the administration's 3.9-billion-dollar foreign aid budget, though the cuts probably will total something less than 10 per cent.

Chances are the big fight, especially in the senate, will be over shifting the program's emphasis rather than on the overall amount of aid.

There is powerful support in the senate for curtailing military assistance, particularly to smaller countries that would not be expected to play a major role in any war that might break out. Those advocating the shift would put more emphasis on economic aid in such countries.

One argument advanced in favor of revising the program is that it is hard to win friends in a foreign country by providing weapons. The military hardware doesn't improve the lot of the man in the street, even if he is aware of it, it is explained. Economic aid, on the other hand, would be more likely to impress the general public, or so it is argued.

The battle will be a hot one, for there is no lack of senators who feel that it is time to cut down on economic aid, too.

*(The "inside page" of Washington Millwheel this month is page 27.)*

## KSU Scientists Study 5,000-Year-Old-Wheat

Five-thousand-year-old wheat is being analyzed by Kansas State University scientists in an effort to discover what chemical changes take place in the so-called "browning reaction."

The grain, uncovered in Israel in 1954, resembles Kansas wheat which has undergone spontaneous heating. When high-moisture grain spontaneously heats, the wheat first turns brown, then black, then carbonizes, and eventually can burn under specific conditions.

The only significant difference between the 50-century-old wheat and modern grains was in ash and sodium content. Much of the original composition in terms of fat, protein, and fiber, was still intact.

The Israel grain has a 33.4 per cent ash content, as compared to 1.8 to two per cent for normal Kansas wheat. However, when elements in the ash were calculated as per cent of total ash, ratios were about the same as for modern wheat, except for the sodium.

**LONG-STORED wheat which pre-dates any federal support program by centuries is shown in views at upper right and lower left. See text for full description of the four samples.**

These four photos show deterioration of wheat more than 5,000 years old. Upper left (with black background) can be seen some normal Kansas hard red winter wheat. At upper right are old wheat grains obtained in Israel which date back to the pre-Bronze age, an estimated 4,000 B.C. If one looks closely he can see some barley grains mixed in with the wheat.

At lower left is some Durham wheat obtained in Egypt which dates back to 400 B.C.; and at lower right is a sample of Kansas hard red winter wheat after it has undergone spontaneous heating. Because of photographic problems, the shades are not true to life. The 4,000 B.C. wheat actually is jet black, while the wheat from 400 B.C. is a mahogany color.

## —Duane McKenzie

*(Continued from page 21)*

saw fit, whether it be radio commercials, newpapers, handbills, or television. But none was to use more than $100. In the two areas where regional media were used, they referred to it; in the third area, they described the product.

The next group of 10 from each area was treated exactly the same except that each was to use $50.

The third group spent no money advertising.

All 90 dealers were given display stands alike. Each was stocked with 200 of the items.

Some of the dealers placed the displays prominently in the front of the store, others placed them in back. Some placed them in center islands, others beside the walls.

Each dealer was given the assignment, and carried it out well. All were vitally interested in the experiment as they wanted to know the results.

All through the month of May, we kept accurate records of orders by the dealers, and at the end, an inventory was taken of each. We also compared total sales of each dealer for the month.

### How It Turned Out

The results speak for themselves:

1) All dealers in Groups I and II, who spent $100 or more, sold all their 200 items and re-ordered, some twice. There was no significant difference between the two groups. Average number of items sold was 327 per dealer, for a gross of $654 per dealer. The top dealer sold 1,002; the lowest sold was 227.

2) Dealers who spent $50 advertising in both Groups I and II averaged 152 items, average gross of $304. Low dealer sold 97, the high dealer 882.

3) All dealers in Groups I and II, who spent no money advertising, averaged 11 items sold, with four selling none even though prominently displayed. Top dealer sold 92.

4) In Region III where no regional advertising was carried on, we got the following results:

1) Dealers who spent $100 advertising averaged sales of 196; top dealer 527, low dealer 72.

2) Dealers who spent $50 averaged sales of 69; top dealer 221, low dealer 37.

3) Dealers who spent no money — only 4 out of 10, total sales all dealers 23. Top dealer 11 items; six sold none.

### Other Facts

Other residual information was of interest.

Besides the sales of our subject item, we found the following results:

1) Overall, the dealers who spent $100 advertising in excess of their normal advertising budget averaged a 13 per cent gain over May of 1958.

2) Dealers who spent the $50 in excess of their normal advertising averaged a nine per cent increase over 1958 for May.

3) Dealers who spent only their normal amount of advertising budget increased their overall sales by only four per cent.

**As for our manufacturer client, we leave the conclusions to you, the reader: does it pay to advertise?**

## Dr. Jukes Resigns From Cyanamid Research Post

Resignation of Dr. Thomas H. Jukes as director of research for the agricultural division of American Cyanamid Co. has been announced by the New York City firm. He will assume the post of vice president in charge of research for Nutrilite Products, Inc., Buena Park, Calif.

Dr. Jukes, who helped pioneer basic research on Aureomycin and other antibiotics, joined Cyanamid in 1942 as associate director of research of the pharmaceutical division. He has been agricultural division research director since 1954.

*A Big H four-way franchise was awarded recently to Kline Produce, Dundee, Iowa.*

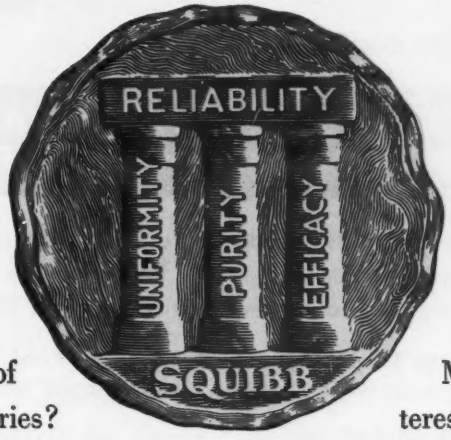
### LAMBRIGHT SALES

A sales increase of 60 per cent during the past fiscal year has been reported by Lambright Hatchery & Poultry Farm, Inc., La Grange, Ind. The hatchery said that it had recently put into full operation a newly developed breeding and research test farm at Howe, Ind.

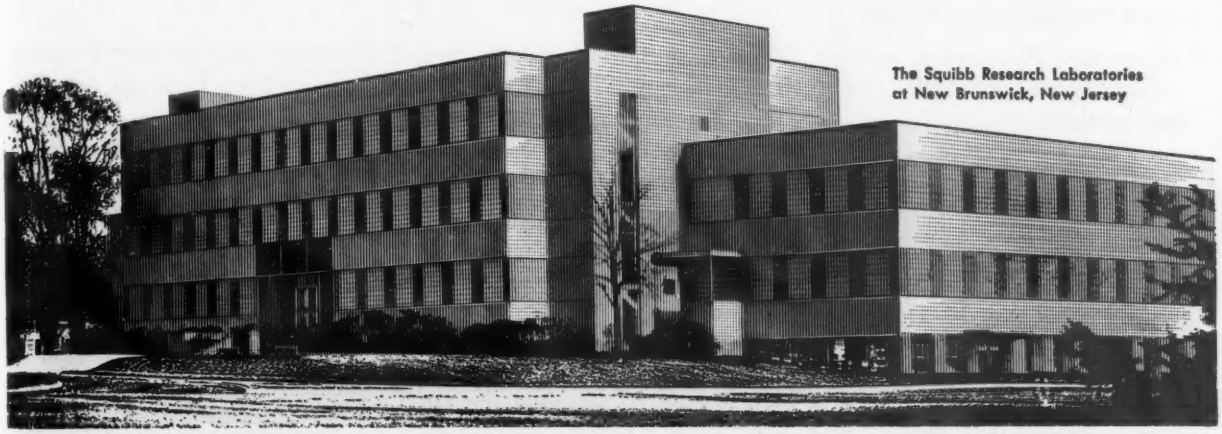
# *A Squibb discovery of great significance to you who use broad spectrum antibiotics in swine and turkey rations . . .*

# mycostatin* | 20

***the first and only antifungal antibiotic for feed use***




May we send you information about this new achievement of the Squibb Research Laboratories? We believe all men with a vital interest in the formulation of more effective livestock and poultry feeds will find Mycostatin-20 of unusual interest and great potential. A letter sent to the address below will bring you detailed data about Mycostatin-20 without delay.



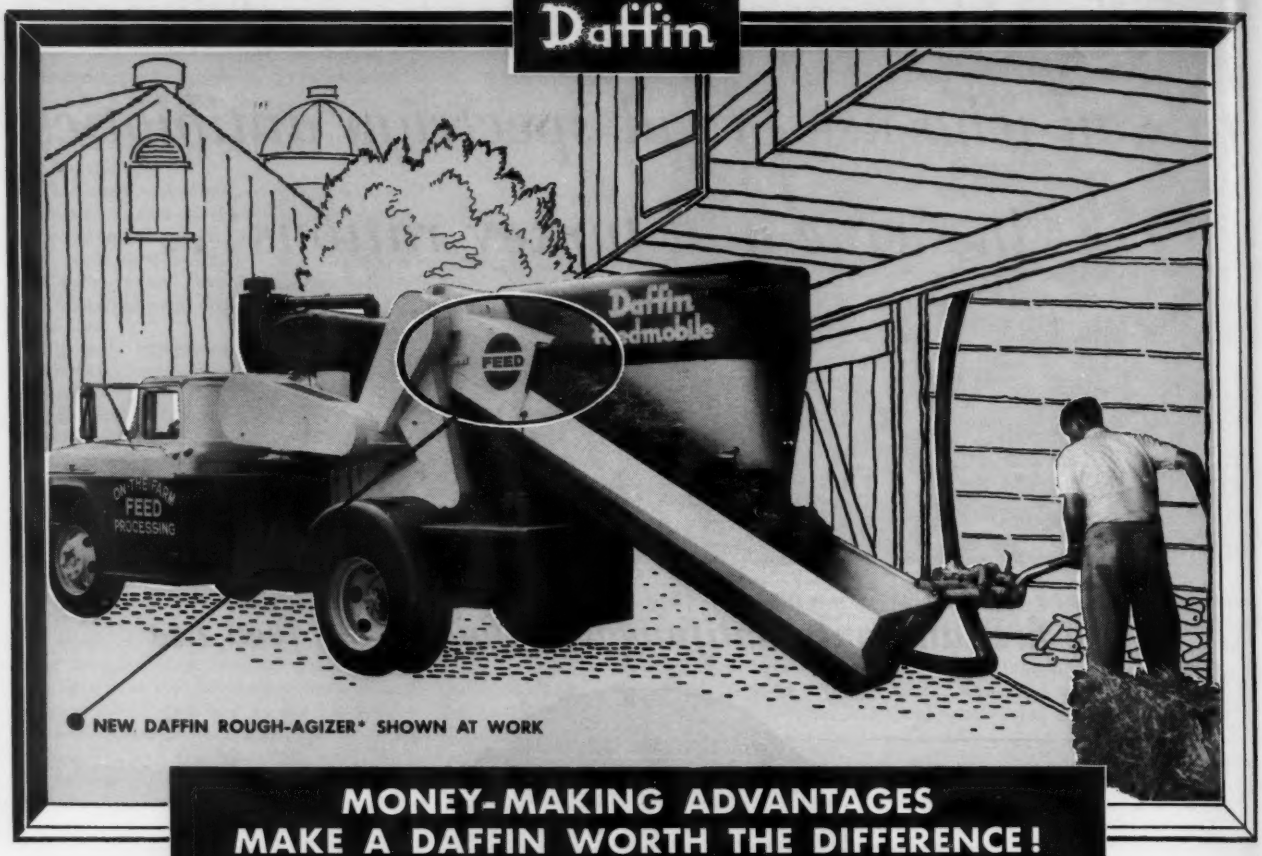
The Squibb Research Laboratories at New Brunswick, New Jersey

CHEMICALS SALES DEPARTMENT, E. R. SQUIBB & SONS, DIVISION OF OLIN MATHIESON CHEMICAL CORPORATION
745 FIFTH AVENUE, NEW YORK 22, NEW YORK

SQUIBB — A NAME YOU CAN TRUST

©OLIN MATHIESON CHEMICAL CORP., '59 *Mycostatin® is a Squibb Trademark

Daffin




NEW DAFFIN ROUGH-AGIZER* SHOWN AT WORK

## MONEY-MAKING ADVANTAGES MAKE A DAFFIN WORTH THE DIFFERENCE!

MEN buying mobile mills decide on "a Daffin" so much more frequently, it's obvious they prefer the Feedmobile's many money-making advantages. Here are just a few Daffin "PLUS" features:

- ★ Rough-Agizer that feeds better than 4 bales of hay a minute right into mill; no need to cut twine!
- ★ Daffin Air Conveyor System lifts finished feed to storage as high as 80 feet.
- ★ Optional 2-way vacuum pick-up, pressure discharge system to automatically draw grain from bins and speed finished feed to storage.
- ★ Heavy-duty Hammermill built of ½" plate steel, equipped with special alloy steel shaft, self-aligning ball bearings.
- ★ Electronic Feed Table Control for raising, lowering and changing feed table speed.
- ★ Unequalled Molasses Blending System integrated with Precision Multi-Action Mixer for accuracy.
- ★ Full-power economy of new 120 H.P. GM Diesel Power Unit to get the job done fast!
- ★ PLUS a host of advantages such as Sales Training School, valuable merchandising help and network of Service Depots.

Remember, Daffin IS Mobile Milling. IN MOBILE MILLS, as in most things, it PAYS to invest in THE BEST! Write for details TODAY on the complete DAFFIN PLAN FOR PROFIT!

Daffin MANUFACTURING COMPANY

Builders of the World-Famous Daffin Packaged Feed Plants, Pneumatic Conveying Systems, Pelleting Machines, Batch Mixers

SERVICE PARTS DEPOTS: Alabama-Montgomery • Georgia-Perry • Illinois-Springfield • Indiana-Indianapolis • Iowa-Cedar Rapids-Sioux City • Kentucky-Shelbyville • Michigan-Detroit • Minnesota-Rochester • Missouri-North Kansas City • Nebraska-Omaha • New York-Syracuse-Tonawanda • North Carolina-Laurinburg • Ohio-Dayton-Youngstown • Pennsylvania-Lancaster • Tennessee-Knoxville-Memphis • Texas-Dallas-Houston-San Antonio • Virginia-Lynchburg • Wisconsin-Oconomowoc • Canada-Toronto

DAFFIN MANUFACTURING COMPANY, 3166 NORTH PRINCE STREET, LANCASTER, PENNSYLVANIA

# Washington Millwheel

*(The "front page" of this issue appears as page 23.)*

## *Apathy Towards Ag Hearings*

The house agriculture committee is holding hearings on a broad new farm program, but no one is paying much attention.

The reason for the lack of interest is simply that there is absolutely no expectation that congress will consider anything in the way of major farm legislation this year. President Eisenhower's veto of the wheat and tobacco bills closed the door.

Members of the house committee explain that the hearings will enable them to get a running start next year, when the Democrats undoubtedly will make an all-out effort to pass a sweeping new program. But whether the hearings are accomplishing much in the way of laying a foundation is doubtful.

The hearings do serve one purpose, however. They give committee Democrats, bitter over the loss of wheat and tobacco bills, a chance to sound off.

## *Supports Are 'Mild Medicine'*

The limit on price support payments voted by congress is pretty mild medicine after all the furor on that subject.

To begin with, the $50,000 limitation applies to only a small handful of producers. Of 476,419 wheat loans made last year, for example, only 117 were for more than that amount.

Congress also decided that the limitation should apply to any one commodity, not to any one producer. In other words, a farmer can get up to $50,000 on each price-supported crop he grows.

On top of that, the law provides that the limitation will not apply to farmers who cut their production by 20 per cent.

Furthermore, a producer can put his entire crop under loan if he agrees to repay everything in excess of $50,000 within one year.

The limitation won't limit very much, which obviously is the way congress intended it to be.

## *Russia Trip Result Tossup for Nixon*

One of the most popular guessing games in Washington is whether Vice President Nixon's trip to Russia will advance or hurt his political ambitions. It could do either, of course. A softening in Russia's attitudes toward such things as the Germany situation and nuclear tests could give the Californian's stock a boost. By the same token, a new show of Soviet resistance to the West's proposals could damage his cause.

There are experienced, knowledgable politicians who maintain that the Russian trip will result in either a net gain or loss for Mr. Nixon, that it cannot be a draw.

They argue that if it should merely be an uneventful trip, with no really outstanding developments, good or bad, he will be the loser because of the public attention given the diplomatic excursion. In other words, these politicians feel he has to move ahead to keep from falling behind. He can't stand still, they maintain.

Actually, there could be a delayed reaction to the visit in the event of a summit conference, say, in September. If a meeting of President Eisenhower and Nikita Khruschev produced some hopeful results, Mr. Nixon might reap credit for laying part of the groundwork.

## *Business Uplift May Help Steady Budget*

It should become apparent within a couple of months whether the government will rebound from a 13-billion-dollar deficit in the fiscal year just ended to a balanced budget in fiscal 1960.

The still hazy picture will be clarified when congress adjourns and the totals of the various appropriation bills it passed are totted up. The government also will have a better idea of how much added revenues it will get as the result of reduced unemployment and greater than expected business activity.

Some experts are forecasting that the advancing economy will add nearly one billion dollars more to the federal income than had been expected several months ago. A few optimistically say the increase may top 1½ billion dollars.

Thus, providing congress doesn't go too far beyond the President's budget estimates, the budget for the coming year could be in balance.

*Helping Feed Manufacturers*

**BUILD SALES**

Werthan Better Built Bags can help **YOU** improve the appearance of your feed package.

**YOU WILL LIKE OUR FAST SERVICE for your requirements of MULTIWALL BURLAP COTTON and DRESS PRINT BAGS Complete Stocks of SEWING THREAD**

***Midwest Sales Office***
**141 W. Jackson Blvd., Chicago, Illinois**
**Phone HArrison 7-4960**

**WERTHAN BAG CORPORATION**
**1400 - 8th Avenue, North**
**NASHVILLE 1, TENNESSEE**

# Ralph Everett Sales Clinic

## Don't Be a 'Ghost' Salesman

**Substantial sales accomplishments are made in only one way — with personal contact. Mr. Everett this month talks about some of the fallacies of what he terms "ghost" selling. The telephone can be used successfully in sales work, he recognizes, but only when the salesman knows how to use the device properly.**

A ghost tried to sell me an automobile last week.

I might have bought it, too, except that I dislike buying something from a mere voice — a ghost on the other end of the line — and, besides, I'd never met this ghost face-to-face. I didn't even know if he was a first or second-class ghost.

I'd be the last person in the world to say that a feed salesman shouldn't use the telephone in his sales work. In fact, it is my belief that too many of us fail to use the telephone when and as we should. For example, in emergencies when a customer can't be reached in person or in setting up appointments, a telephone can be the salesman's best friend.

I still think it's poor business judgment to telephone a prospective customer and then launch right into a long-winded sales presentation. I also think it isn't good business to tell a prospective customer too much when you are asking for an appointment. Sure, he has every right in the world to want to know what you want to see him about, but if you give your story away over the telephone, what have you got to tell him when you make your call?

### What to Say

Tell him what you can do for him in terms of saving him work, reducing his risks, or making him more money and you'll have him interested enough to want to see you face to face. If he presses you for additional information, tell him that the information and plan you have for him are too important to discuss over the phone and ask him whether it will be convenient for him to see you on Tuesday or Thursday. When he has decided on the day of the week, give him a further choice of morning or afternoon and then nail down the exact time for the appointment.

But even in making appointments, I'm not too fond of using the telephone when a face-to-face interview can be arranged. Think of the number of times a life insurance salesman has telephoned to ask for an appointment. What goes through your mind? Don't you instinctively say to yourself:

"Is this guy too lazy to call on me personally?"

"If my business is so important, why doesn't this character stop by to see me?"

Incidentally, how many times do you say to yourself after the brushoff succeeded, "Saved by the bell"?

Now, put yourself in the farmer's shoes. He's an important man, a busy man. He doesn't want to talk to a ghost. He wants to talk to a real live human being. He wants someone to call on him personally who will value his business. The same things go through his mind as went through yours when the insurance man called:

"Is this salesman too lazy to come to see me?"

"If my business is so important, why doesn't this salesman visit me personally?"

Or the inevitable, the brushoff!

### Using the Phone

If you do have prospects who are difficult to contact except by telephone, then use the phone correctly. Introduce yourself properly. State your name and your company slowly and distinctly. If your message sounds like, "This is Jish Slowanumum of the Unfilafab Co.," what do you think the man on the other end of the line will think?

Then state your business. "Mr. Jones, my company [not you] has a plan which will save you work and time, besides helping to lower your production costs (or whatever it is you can honestly do for him). I'd like to make an appointment to discuss this plan with you at your convenience. It will take about an hour (or whatever time it will honestly take) to explain our plan to you."

RALPH EVERETT
"Don't be a ghost."

Then give him a choice of times for the appointment. If he wants to know more about the plan at this point, you can tell him the plan itself is too important to discuss over the phone but you can mention two or three respected people in the neighborhood who have benefited from the plan and, if you wish, the extent to which they have benefited.

There is no substitute for a personal call right on the farm. As salesmen we should thank our lucky stars for this. You can never project your true personality over a telephone wire, no matter how hard you try. You can never let the prospect feel the warmth of a friendly smile or the confidence of a firm handshake over the miracle of electronics.

**Yes, thank goodness, the modern electronic gadgets are not replacing the need for our personal calls. When it's good business to use the telephone, then use it and use it properly if you don't want to sound like a ghost.**

**P.S. Next time you're in town (Miami) give me a ring and we'll set up a date for lunch.**

*A new Strong-Scott molasses regulator was recently installed at Kalmbach-Burke, Inc., Baton Rouge, La.*

# An extra $10 pure profit per head with TRAN-Q®

John McGregor
McGregor Land and
Livestock Company
Hooper, Washington

**In a 130 day feeding trial,** McGregor's Tran-Q supplemented steers gained an average 43.6 lbs. more than controls; improved feed efficiency by 11%. These results were in addition to stilbestrol, implanted in both Tran-Q fed steers and controls before the trial began.

TRIAL RESULTS
(in cooperation with Washington State College)

| | Control | Tran-Q | Improvement over control |
|---|---|---|---|
| Total gain | 373.6 | 417.2 | 43.6 lbs. |
| Average daily gain | 2.87 | 3.21 | .34 lbs. |
| Cost of gain (per lb.) | 17.49¢ | 15.69¢ | 1.80¢ |
| INCREASED NET RETURN | | $10.83 per head | |

## WHAT IS TRAN-Q?

Tran-Q is a unique member of the tranquilizing drug family which has been undergoing extensive tests for many years. It has given handsome increases in feeder profit through its help in providing extra gains and feed efficiency. Tran-Q has:

- **Boosted beef gains up to 27%**
- **Improved feed efficiency up to 23%**
- **Added up to $11.13 return per head above the cost of Tran-Q.**

The extra gains and feed efficiency your customers will get when your feeds contain Tran-Q are not available from any other feed ingredient.

Tran-Q is effective in all types of rations including high-roughage and high-energy finishing rations.

### Impressive results with sheep, too

In trials with lambs, feeds containing Tran-Q have:

- **Boosted gains up to 28%**
- **Improved feed efficiency up to 22%**
- **Added an average $1.71 profit per lamb above the cost of Tran-Q.**

### Get full data now

FDA has cleared Tran-Q for addition to your feeds alone or in combination with Terramycin.

Remember, Tran-Q is an entirely new kind of feed ingredient—unlike any now in your feeds. This important nutritional discovery may well change the entire market for your formula beef feeds.

Call your Pfizer representative for details on this new way to boost feed sales.

**TRAN-Q®**

BRAND OF HYDROXYZINE HYDROCHLORIDE

Chas. Pfizer & Co., Inc.

*Science for the world's well-being*

BROOKLYN • CHICAGO • DALLAS
CLIFTON, N.J. • CHAMBLEE, GA • SAN FRANCISCO
IN CANADA: MONTREAL

# How can I save on my mixing costs?

*Real savings are possible with Morton Trace-Mineralized Salt if all costs are calculated. The cost of mineralizing a ton of feed will, of course, vary depending upon the levels of trace minerals used, transporation cost, and so on.*

With Morton Trace-Mineralized Mixing Salt, for example, you'll be assured uniform distribution of trace minerals in your finished feeds without incurring premixing costs. You save time and reduce chance of error. What's more, you may find that it's a lot cheaper to buy Morton Trace-Mineralized Salt instead of a trace mineral concentrate and plain salt!

Important, too, are Morton's 25 years of experience in evaluating and blending trace elements and salt. Morton's volume purchases of trace minerals and continuous research means you get only the best by test, for less cost.

Get all the facts by sitting down with a Morton technologist and finding out exactly how much you can save on mixing costs. Send in the coupon today.

---

Mail coupon today for more information!

MORTON SALT CO., Dept. FB-7-2
110 No. Wacker Drive
Chicago 6, Illinois

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*Company* _____

*Address* _____

*City* _____

*County* _____ *State* _____

# Morton mixing salts

*Trace Mineralized—Iodized—Special*

# Dehy Data

American Dehydrators Association
PASTURE IN THE BAG

By JOSEPH CHRISMAN

**Forage crop dehydrators, nutrition people, and crop specialists will convene at the Western Regional Laboratory, Albany, Calif., on July 16 to participate in the sixth conference of a technical nature to be sponsored by the western utilization research and development division of the Agricultural Research service and the American Dehydrators association. The Dehy Datar discusses the program and reports on the history of the conferences.**

At the opening of the morning session the assembly will be welcomed by Dr. M. J. Copley, director of the division.

### Forage Juice Factor

The forage juice factor will be emphasized on the program with Dr. George O. Kohler, acting chief of the field crops laboratory at Albany, giving a "General Review of the Forage Juice Situation." Dr. D. I. Gard, who is in charge of poultry nutrition at Eli Lilly & Co.'s new research center at Greenfield, Ind., will discuss "Forage Juice in Swine Feeds."

Dr. J. H. Meyer of the animal husbandry department at the University of California will discuss the "Use of Pelleted and Other Forms of Alfalfa in Ruminant Feeding."

### Estrogenic Activity

In view of recent developments in cattle feeding trials, there is increased interest in the estrogenic activity found in many forages. E. M. Bickoff of the field crops laboratory at Albany will present information on the "Chemistry and Distribution of Estrogens in Forages." Dr. A. N. Booth of the western regional laboratory will tell "The Past, Present, and Future of Estrogens in Feeds."

Dr. C. Ray Thompson, acting head of forage investigations at the field crops laboratory in Albany, will tell "Where We Stand on Saponins."

Farm research on alfalfa will be the topic covered by C. H. Hanson, who is in charge of the alfalfa breeding program for the crops research division of the Agricultural Research service, Beltsville, Md.

### Engineering

Certain engineering aspects will receive considerable attention on the program because of need for greater mechanization in the entire forage crop industry for greater ease in bulk handling and feeding. J. B. Dobie, agricultural engineer for the University of California, will discuss "Engineering Aspects of Hay Wafering and Pelleting."

Exhaustive analyses have recently been completed on various dehydrated forages and Dr. H. P. Binger of the field crops laboratory will report on the findings in a paper entitled "Vitamins and Chemical Studies in Dehydrated Forages."

Robert Fulton, Manager of the Alfalfa Division of Archer-Daniels-Midland Co., Kansas City, will discuss "Quality Control in Forage Processing."

The research program of the American Dehydrators association will be reviewed by the association's executive vice president.

### Conference History

In 1951, through the cooperative efforts of Lloyd S. Larson, at that time secretary-treasurer of the American Dehydrators association; Dr. W. Dayton Maclay, then head of the biochemical division, Western Regional Research laboratory and also chairman of ADA's alfalfa research council; and Dr. M. J. Copley, director of the Western Regional Research laboratory, a West coast conference was convened at Albany, Calif., to review alfalfa research progress. Similar conferences have been held in 1953, 1955, 1957, and 1958.

Primarily these conferences have been concerned with forage crop utilization, but other phases of the overall forage picture have not been overlooked in the many papers delivered over the years. Subjects of interest to growers, processors, and users have been reviewed. Almost half of the 45 papers presented in the past five conferences have been devoted to feeding and vitamins, while better than a quarter of them have dealt with crops and operating procedures.

At the time of that first conference in 1951 the research program of the American Dehydrators association was in its third year.

Mr. Larson's statement at the opening of that first session expressed well the feeling of the industry when he said, "Research not only gives us sound knowledge but new knowledge, with which we can improve our services to our great livestock industry. The association is still young but, nevertheless, it has found that expansion of market and improvement of products depend on progress in research."

**Since those early days, interest of the dehydrating industry in the association's research program has never waned. Today that industry is enjoying benefits derived from a decade of such research and is a much healthier and happier industry than it would otherwise have been.**

*A Strong-Scott molasses regulator was installed recently at Puritan Mfg. Co., Omaha.*

## Cooley Heads Specialized Sessions of Feed School

Appointment of Maxwell L. Cooley as chairman of its 1959 specialized sessions program has been announced by the Feed Production school, Kansas City. The school is scheduled for Sept. 23-25, with the specialized topics to be covered on the final day.

The committee chairman is associated with Hoffman-Taff, Inc., Springfield, Mo. His agenda will include liquids handling, pellet handling and conveying, cooling, premixing, quality control, and incorporation of roughages.

General theme of the three-day school this year will be pelleting. Lloyd S. Larson heads the school and John Wessman is director of activities.

*Laddonia (Mo.) Feed & Farm Supply recently was awarded a Big H four-way franchise.*

### FOXBILT ELECTS

The following have been elected as officers of Foxbilt, Inc., Des Moines: D. E. Peck, vice president; Barry N. Minear, assistant secretary; and C. B. McClelland, director. All other officers and directors were re-elected.

# BO-DEE MINERAL STABLE D2

WISCONSIN ALUMNI RESEARCH FOUNDATION
Approved for VITAMIN D upon periodic tests

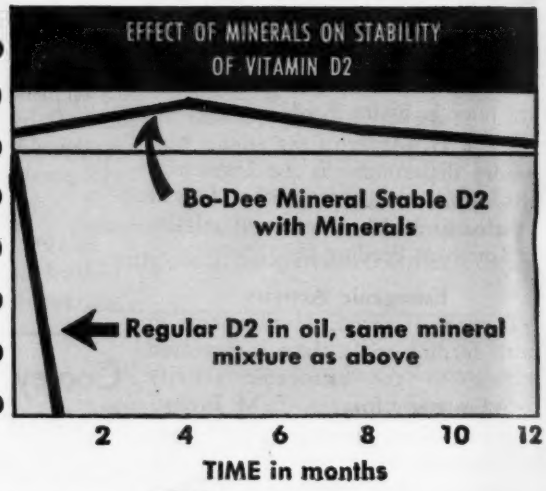
# *Now* APPROVED

For 12 months stability in the presence of these listed minerals by

## WISCONSIN ALUMNI RESEARCH FOUNDATION

***Note:*** **MINERAL STABLE D2 fully present at the end of 12 months. Ordinary D2 practically gone in 30 days.**

| | | | |
|---|---|---|---|
| Ground Limestone | 41.23% | Ferrous sulfate | 0.50% |
| Steamed bonemeal | 15.00 | Copper sulfate | 0.15 |
| Tricalcium phosphate | 13.00 | Manganese sulfate | 0.10 |
| Magnesium sulfate | 10.00 | Cobalt sulfate | 0.02 |
| Iodized sodium chloride | | | 20.00% |

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## BOWMAN FEED PRODUCTS, INC. Holland, Michigan

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## CHARLES BOWMAN & CO., 220 East 42nd St., New York 17, N.Y.

Distributors for NORTH AMERICAN PHILIPS COMPANY, INC.

Send for new low prices and technical bulletin

BOWMAN FEED PRODUCTS, INC., Holland, Michigan

Please send me full information and prices on new MINERAL STABLE VITAMIN D2.

NAME_____

COMPANY_____

ADDRESS_____

# Voice of the Industry

## LETTERS FROM OUR READERS

We want to commend you on the fine job which you have done on the article on our plant in your May issue. It is certainly without error.

**James Woody,** President
Tindle Milling Co.
Springfield, Mo.

The Feed Bag Red Book contains a great deal of material that would serve as useful up-to-date reference for teaching and other purposes. It would be required for individual students in our production and applied nutrition courses if extra copies are obtainable.

**Prof. E. B. Stanley**
College of Agriculture
University of Arizona
Tucson

Many thanks for the excellent way in which you covered the PENB story at our annual meeting in Chicago. You're doing an excellent job.

**Lloyd H. Geil,**
General Manager
Poultry & Egg
National Board
Chicago

Would you please send me 2,000 reprints of the article, "New Findings on Role of Fat in Poultry Nutrition," which appeared in the April issue of The Feed Bag?

**J. M. Hagerty,** Sales Manager
Agricultural Division
E. F. Drew & Co., Inc.
New York City

May I thank you for the wonderful article on Dr. Paul Phillips in your November, 1958, issue? Paul is my brother and I enjoyed reading this tribute to him.

**Mrs. Eva M. Kennedy**
Colton, Calif.

We want to thank you for the article appearing in your May issue in regards to our operations. Reporter Nees did a good job and you people certainly finished out the article in nice fashion in your magazine.

**W. Floyd Deacon**
B & D Mills
Grapevine, Tex.

## Projects Progressing at Feed Production School

Progress is being made on all seven research projects being jointly conducted by the 1959 Feed Production school and industry, it has been reported by Eric Carlson, chairman of the school's research committee.

The projects are: pelleting dairy feeds, Sprout, Waldron & Co.; effect of pelleting on micro-ingredients, Chas. Pfizer & Co.; factors in conditioning mash, Wenger Mixer Mfg. Co.; economic factors in bulk vs. feed handling, Containers Laboratories.

Bulk pellet handling & storage, Butler Mfg. Co.; cost of pelleting, Wolf Management Engineering Co.; and effect of die speeds on pellet hardness, Wenger.

## List Methods to Reduce Soybean Shipping Loss

Human weakness, rather than mechanical failure, is the main cause of losses which occur during soybean shipping, judging from a study carried on at the University of Maryland.

Marketing specialists said that if everyone concerned in the transportation and marketing of soybeans would carry out his full responsibility, excessive weight shortages would not occur.

Five railroad cars were used in the study. With careful handling, an average weight loss of only 46 pounds was observed between the initial weighing of the empty cars and the final car weighing. This loss was attributed to the drying out of the car itself.

The specialists recommended that sufficient cars suitable to haul grain with minimum leakage be provided; that country dealers inspect cars for leaks; that terminal elevator scales be checked for accuracy; and that all cars be completely clear of beans after unloading.

## Elevate Dr. Caldwell to Moorman Research Post

Appointment of Dr. Marion J. Caldwell as assistant director of research has been announced by Moorman Mfg. Co., Quincy, Ill. Dr. Caldwell joined the firm's research staff in 1947.

He received his Ph.D. degree from Kansas State University, after attending Iowa State University. The appointee formerly was a professor of chemistry at Kansas State and assistant professor at Rolla (Mo.) School of Mines.

## Dick Ammon in Neppco Executive Secretariat

Appointment of Richard I. Ammon as executive secretary has been announced by the Northeastern Poultry Producers council. Mr. Ammon formerly held that position with the Pennsylvania Millers & Feed Dealers association.

While with the latter group, he aided in the development of a monthly news digest

SECRETARY DICK AMMON

for members, an annual directory, group insurance plan, credit bureau, and a special legislative service.

Mr. Ammon is a graduate of Yale University's Northeastern institute for trade association executives and the Newspaper Institute of America. He is past president of the Secretaries' Circle.

Also announced was the promotion of Dr. Alfred Van Wagenen to the post of director of research & development. He formerly was managing director. The association said it intends to conduct more research on egg quality improvement programs.

## Urge Training Pullets To Lay Eggs in Nests

If a hen's first eggs are laid somewhere other than in a nest, it will be difficult to train the bird later to use a nest, according to poultrymen at Ohio State University. It is recommended that nests be available to the flock several weeks before the first eggs are expected.

If the house is crowded, timid pullets will be inclined to lay on the floor. If eggs are laid on the floor, the poultry scientists said, they should be collected promptly, since if pullets just starting to lay see the eggs on the floor they are likely to become floor layers themselves.

Nesting material should be used in wire bottom nests until all birds in the flock are in production. It can be removed gradually, since the hens will have developed the habit of laying in the nests and will continue to use them even if they find the wire bottoms objectionable, it was explained.

# Poultry Price Outlook

**A rise in egg production of one to two per cent over the same period in 1958 is predicted for the last six months of 1959 by the Poultry Survey committee. Prices will average five or six cents below the year earlier during July-September, and two cents below 1958 during September-December. This is the committee's 10th report.**

The increase in egg production is attributed to a higher rate of lay and a slightly higher number of layers. The four per cent reduction in the January-May hatch was not enough to offset the larger number of layers on farms at the beginning of 1959, the committee said.

A decline of two cents below the same period of 1959 is forecast for the first quarter of 1960, but second quarter prices will probably be two cents above the comparable period this year.

A smaller egg supply is seen for the first half of next year, with an estimated two per cent drop in the number of layers. An increased rate of lay will help offset the drop, however. The July-December (1959) hatch of egg-type chicks is expected to be about equal to the same period of 1958.

It is not known whether the government will purchase eggs in 1960. During the first half of 1959, the government bought about one per cent of total egg production.

### Broiler Picture

A jump of one cent per pound is predicted for broilers during the third quarter of 1959, as compared to the same period last year. Prices will average between 18-19 cents during the period. Marketings are expected to be about five per cent smaller than the comparable period of 1958.

Marketings during the last quarter of 1959 are expected to exceed those of the same period last year, however. Prices during October-December will average lower than last year's 15.6 cents.

Many broiler processing plants recently were enlarged when they were remodeled to meet federal inspection requirements. The resulting combination of unused processing capacity and increased overhead costs has added to processors' incentives to increase volume of broilers handled, it was said.

### Turkey Prices Up

Higher consumer incomes and the continued increase in population will result in a stronger demand for turkeys, and prices during August-December, 1959, will average about one cent higher than the 23.5 average received last year.

An all-time high in the number of turkeys produced will be set this year, with most of the increase in the light breeds.

Cold storage holdings at the start of the August-December period will be substantially below 1958 and slightly below the five-year average. Prices of heavy toms coming out of storage have recently improved and early season tom prices will be stronger than last year, the committee predicted.

Last year, the government bought about two per cent of total turkey production. It is not known whether any of its agencies will purchase turkeys this year.

## PROGRAM

### TENTH NUTRITION SCHOOL FOR FEED MEN

### Memorial Union, University of Wisconsin, August 11-12, 1959

**TUESDAY — AUGUST 11**

Eldon H. Roesler, Chairman

**7:45** ..... REGISTRATION

**9:40** .....WELCOME TO THE CAMPUS
— C. A. Elvehjem, President, University of Wisconsin

**10:00** .....GREETINGS FROM W.V.M.A.
— Burr W. Nussdorfer, President, Wisconsin Veterinary Medical Association

**10:05** .....CROPS, FEED AND LIVESTOCK
— W. H. Ebling, Dept. of Agricultural Economics, University of Wisconsin and USDA

**10:40** .....MERCHANDISING NUTRITION RESEARCH
— E. I. Robertson, Director of Nutrition, John W. Eshelman & Sons, Lancaster, Pa.

**11:20** .....EFFECTS OF DIFFERENT LEVELS OF NUTRITION ON DAIRY CATTLE
— J. K. Loosli, Cornell University, Ithaca, N. Y.

**12:00 - 1:00** ..... NOON LUNCHEON

Paul H. Phillips, Chairman

**1:15** .....ENERGY LEVELS FOR GROWING PULLETS AND LAYING HENS
— M. L. Sunde, University of Wisconsin

**1:45** .....COCCIDIOSIS IN CHICKENS AND THE ROLE OF COCCIDIOSTATS
— David F. Green, Merck & Co., Inc.

**2:30** ..... RECESS

**2:45** .....RELATIONSHIP OF FEEDING TO KETOSIS IN DAIRY CATTLE
— L. H. Schultz, University of Wisconsin

**3:20** .....PELLETED FEEDS FOR MEAT ANIMALS
— A. L. Pope, University of Wisconsin

**3:40** .....PELLETED FEEDS FOR DAIRY CATTLE
— R. P. Niedermeier, University of Wisconsin

**4:00** .....QUESTION BOX
— H. T. Scott, Wisconsin Alumni Research Foundation, Chairman

**6:00** .....BANQUET AND PROGRAM, Great Hall, Memorial Union

**WEDNESDAY — AUGUST 12**

Gerald E. Annin, Chairman

**9:00** .....VITAMIN PROBLEMS OF RUMINANTS, SWINE AND POULTRY
— J. W. Crowley, R. H. Grummer, H. R. Bird, University of Wisconsin

**9:50** .....THE USES OF FEED ADDITIVES IN BEEF CATTLE FEEDING
— E. R. Hauser, University of Wisconsin

**10:20** ..... RECESS

**10:35** .....VETERINARIAN AND FEED MAN RELATIONS
— R. E. Nichols, University of Wisconsin

**11:00** . . EARLY DAYS OF THE UNIVERSITY OF WISCONSIN POULTRY DEPARTMENT
— J. G. Halpin, Murphy Products Co.

**11:30** .....METHODS OF SUMMER FEEDING DAIRY CATTLE
— Howard J. Larsen, University of Wisconsin

**12:00 - 1:00** ..... NOON LUNCHEON

Robert H. Grummer, Chairman

**1:15** .....SWINE NUTRITION AND MANAGEMENT
— O. Burr Ross, University of Illinois

**2:00** .....MOVE TO THE NEW UNIVERSITY CENTER FOR SPECIAL INFORMAL DISCUSSION GROUPS.

| Group | Discussion Leader |
|---|---|
| 1. Dairy cattle | J. W. Crowley, University of Wisconsin |
| 2. Beef and sheep | F. J. Giesler, University of Wisconsin |
| 3. Swine | H. L. Self, University of Wisconsin |
| 4. Poultry | H. R. Bird, University of Wisconsin |

**4:00** ..... ADJOURNMENT

# DYNAFOS®

## takes the waste out of phosphorus feeding

- **Ends the need to add unnecessary margins of safety**
- **Proves that all chemically processed phosphates are not alike**
- **Out-performs phosphates of low availability even under "practical" conditions**
- **Makes feeding recommendations based on phosphates of low availability out-of-date**
- **Provides proven high phosphate availability with low calcium content**
- **Makes it unprofitable to over-fortify with phosphates of low availability**

Buying "second best" feed phosphates to cut formulation costs is false economy. Second best or low cost sources actually waste phosphorus because much of the phosphorus isn't available—can't be used by livestock or poultry.

This makes feeding inferior phosphates an expensive business, especially when compared with the readily available phosphorus provided by International's Dynamic DYNAFOS.

Biological availability tests prove DYNAFOS is today's superior dicalcium phosphate. It is chemically processed and purified . . . low in calcium too. DYNAFOS delivers more available phosphorus in every pound—out-performs phosphates of low availability even under practical conditions . . . ends the need to add unnecessary margins of safety.

You cut formulation costs because you actually need less Dynamic DYNAFOS. And unique beaded form makes handling and mixing better than ever. Write or wire your International representative for details.

Producers of
Living Minerals

MINERALS International CHEMICALS

31-59

**FEED INGREDIENTS DEPARTMENT, AGRICULTURAL CHEMICALS DIVISION**

**INTERNATIONAL MINERALS & CHEMICAL CORPORATION**

*Administrative Center: Skokie, Illinois*

**Sales Agents: EASTERN AREA:** GRANDONE, INC., Needham (Mass.); SUNSET FEED & GRAIN CO., INC., Buffalo; P. R. MARKLEY, INC., Philadelphia; A. G. GREENE COMPANY, Charlotte (N. Carolina); EDWARD E. SMITH COMPANY, Atlanta; E. A. CARTER BROKERAGE COMPANY, Tampa. **CENTRAL AREA:** BULLARD FEED COMPANY, Chicago; GOOD LIFE CHEMICALS, INC., Effingham (Ill.); JOHN T. YOUNG COMPANY, Cincinnati; R. D. ERWIN COMPANY, Nashville; CHAS. F. WILLEN CO., INC., Birmingham (Ala.); STANDARD SALES COMPANY, Meridian (Miss.); The VITA PLUS CORPORATION, Madison, (Wis.). **MIDWEST AREA:** BLOMFIELD-SWANSON, Minneapolis; W. P. MANN SALES CO., Omaha; M. A. McCLELLAND COMPANY, Kansas City (Mo.); B. A. LUCIUS COMPANY, Fort Worth. **WEST COAST:** JAMES FARRELL & COMPANY, Seattle; JAMES FARRELL & COMPANY, Compton, (Calif.). **CANADA:** N. D. HOGG LTD., Toronto.

# Coming Events

**American Poultry & Hatchery Federation,**
Kiel Auditorium, St. Louis ..... **July 21-23**

**Feed Microscopy Short Course, Texas A & M College,** College Station..... **Aug. 3-8**

**Midsouth Soybean & Grain Shippers Association,**
Hotel Peabody, Memphis, Tenn. ..... **Aug. 4-5**

**North Carolina Feed Manufacturers Association,**
Ocean Forest Hotel, Myrtle Beach, S. C. ..... **Aug. 7-8**

**Wisconsin Feed Nutrition School,** University of Wisconsin, Madison..... **Aug. 11-12**

**Kentucky Feed Conference,** Brown Suburban Hotel, Louisville ..... **Aug. 17-18**

**National Hay Association,**
Sir Francis Drake Hotel, San Francisco ..... **Aug. 23-25**

**Pet Food Institute,** Drake Hotel, Chicago ..... **Sept. 9-10**

**Grain & Feed Dealers National Association,**
Radisson Hotel, Minneapolis ..... **Sept. 13-14**

**Mutual Millers & Feed Dealers Association,**
Hotel Jamestown, Jamestown, N. Y. ..... **Sept. 15-16**

**National Feed Ingredients Association,** Congress Hotel, Chicago..... **Sept. 16-18**

**Arkansas Formula Feed Conference,**
University of Arkansas, Fayetteville ..... **Sept. 17-18**

**Iowa Feed Industry - College Conference,** Iowa State College, Ames ..... **Sept. 18**

**Vermont Feed Dealers & Manufacturers Association,**
University of Vermont, Burlington ..... **Sept. 23**

**Feed Production School,** Continental Hotel, Kansas City ..... **Sept. 23-25**

**Texas Nutrition Conference,** Texas A & M College, College Station..... **Oct. 7-9**

**Animal Nutrition Research Council,**
Shoreham Hotel, Washington, D. C. ..... **Oct. 14**

**Association of American Feed Control Officials,**
Shoreham Hotel, Washington, D. C. ..... **Oct. 14-15**

**Michigan Grain & Feed Association,**
Michigan State University, East Lansing ..... **Oct. 15-16**

**Illinois Feed Association,** Armory, Springfield ..... **Nov. 4-5**

**National Renderers Association,**
Hollywood Beach Hotel, Hollywood, Fla. ..... **Nov. 4-7**

**Oklahoma Formula Feed Conference,**
Oklahoma State University, Stillwater ..... **Nov. 6-7**

**Cornell Nutrition Conference,** Hotel Statler, Buffalo ..... **Nov. 12-13**

## Wolfe Heading Chemical Advertising Group

Election of H. George Wolfe as chairman of its chemical group has been announced by the Association of National Advertisers. The group includes the advertising and mar-

MERCK'S GEORGE WOLFE

keting executives of most of the nation's leading chemical manufacturers.

Mr. Wolfe is advertising manager of the chemical division of Merck & Co., Inc., Rahway, N. J. Named as vice chairman of the chemical group was Clem W. Kohlman, advertising manager of the industrial chemicals division of American Cyanamid Co., New York City.

## Western Manager Post For Coronet Products

Appointment of E. P. Chandler as western manager of feed phosphate sales has been announced by Smith-Douglass Co., Norfolk, Va. John L. Lindsay was named to assist Mr. Chandler in sales representation.

The new manager has been associated with Smith-Douglass since 1958. Prior to that, he was employed by Texas City Chemicals as traffic manager. He will headquarter in Texas City, Tex.

## Dr. Knauff in Research Post at Borden Division

Appointment of Dr. D. Richard Knauff as research and development coordinator of its special products company has been announced by the Borden Co., New York City. Dr. Knauff will headquarter at the product development laboratory at Elgin, Ill.

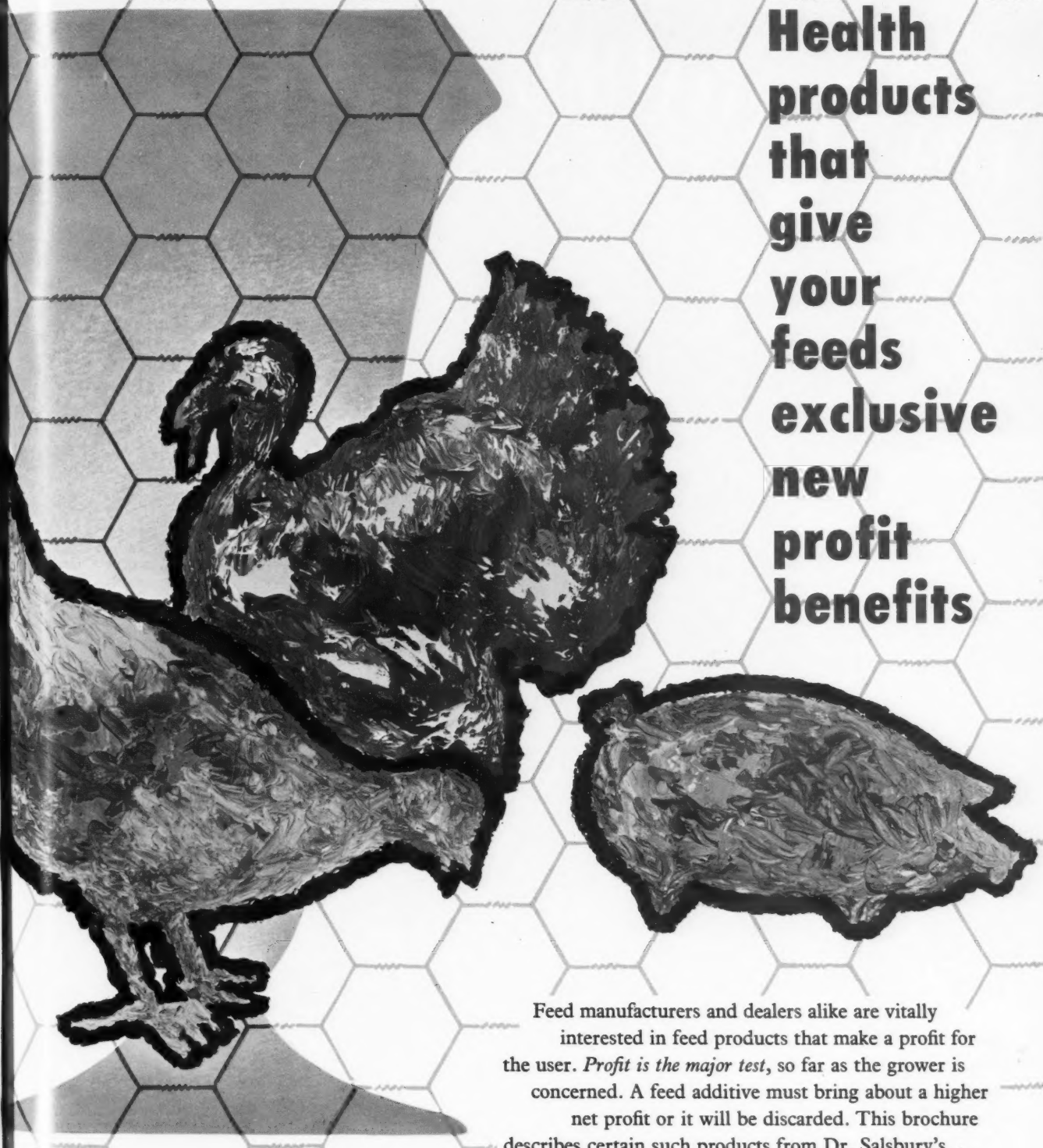
The appointee was most recently associated with Hess & Clark, Inc. Prior to that, he was on the faculty of the University of Minnesota.

He is an alumnus of the Universities of Georgia and Maryland. During World War II, Dr. Knauff served with the marine dog detachment, training canines for combat duty.

Salsbury's Laboratories—

the Scientific Approach to Poultry Health Problems

# Health products that give your feeds exclusive new profit benefits



Feed manufacturers and dealers alike are vitally interested in feed products that make a profit for the user. *Profit is the major test*, so far as the grower is concerned. A feed additive must bring about a higher net profit or it will be discarded. This brochure describes certain such products from Dr. Salsbury's Laboratories, where the practical side of research is of primary concern.

***RE ARE ANSWERS TO VITAL POULTRY AND SWINE HEALTH PROBLEMS***

DETACH INSERT AND FILE

# Millions of dollars will be lost by growers this y

## HERE'S HOW WORMS COST GROWERS A LOT OF MONEY

### • They damage birds

Internal parasites irritate the intestine, reducing its operating efficiency. They may produce toxins tending to weaken the bird. Younger birds die when worms block the intestine. Serving as a constant stress factor, worms often set the stage for disease outbreaks.

### • They boost feed costs

Worms use feed which has already been digested by the bird, thus robbing it of essential nourishment. Of course, one worm has little appreciable effect but wormy flocks may have thousands of worms in all stages of development, causing poultry to waste feed.

### • They lower production

**These unseen pests interfere with growth, impair development, delay maturity and reduce egg production. Growing pullets, poults, and broilers loaded down with worms seldom make profitable gains; even mild infections in laying flocks can cut production 30 dozen eggs per 100 hens per month.**

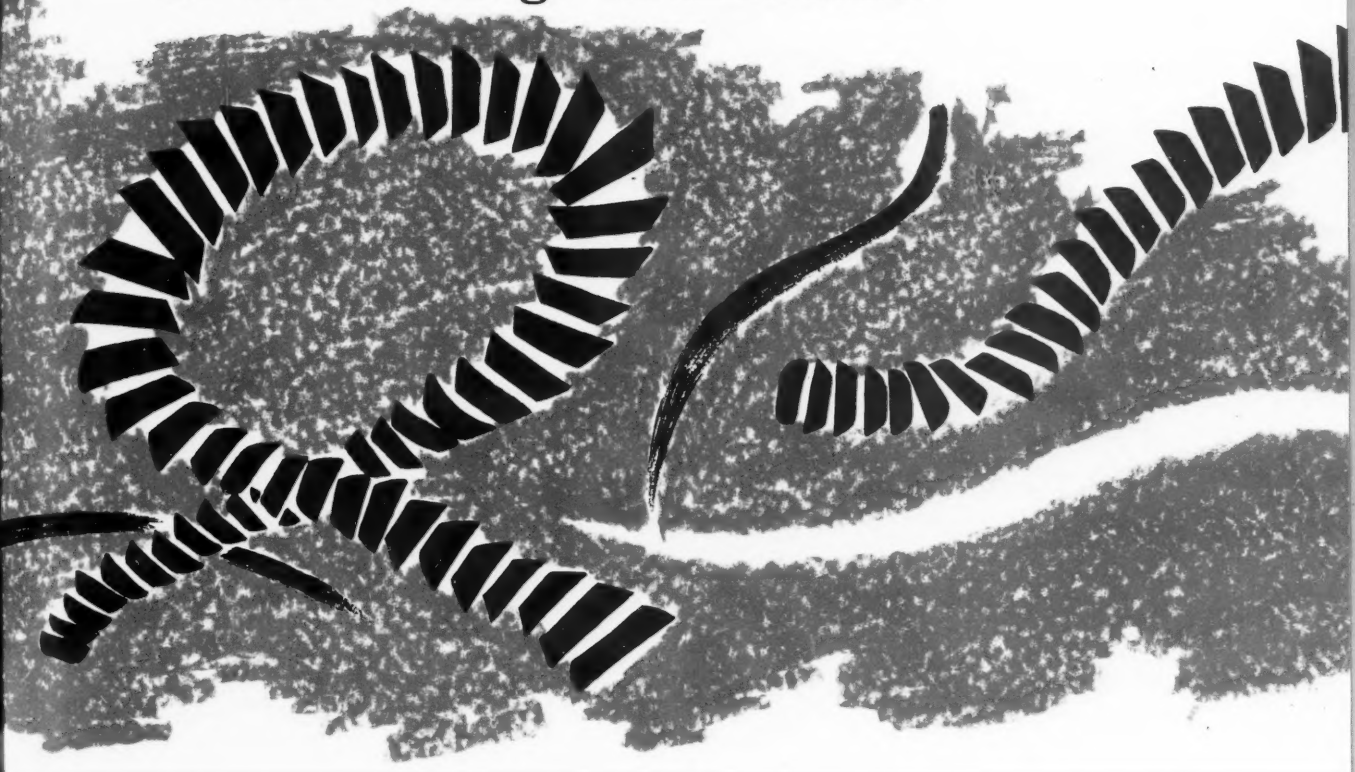
### • They multiply fast

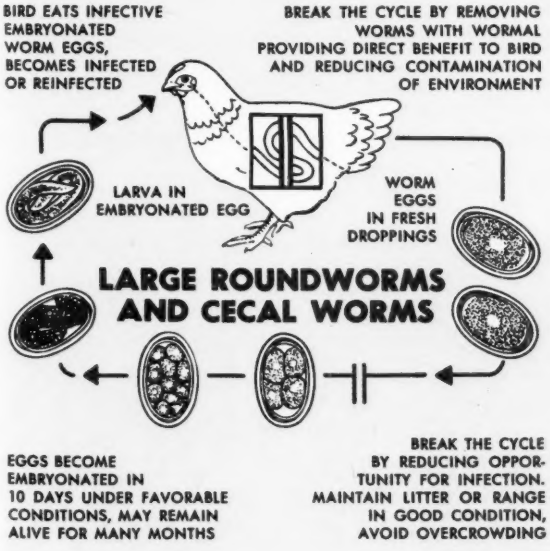
Three different types of worms cause damage of economic importance—*large roundworms, cecal worms* and *tapeworms.* Life-cycle diagrams on opposite page show the "inside story" of a worm's private life. What the diagrams do not show is the amazing rate at which worms multiply. For example, a female large roundworm lays 5,000 or more eggs daily—all of which pass off with the droppings to infect other birds and start the cycle all over again. This rate of reproduction is why the worm problem gets steadily worse in unprotected flocks.

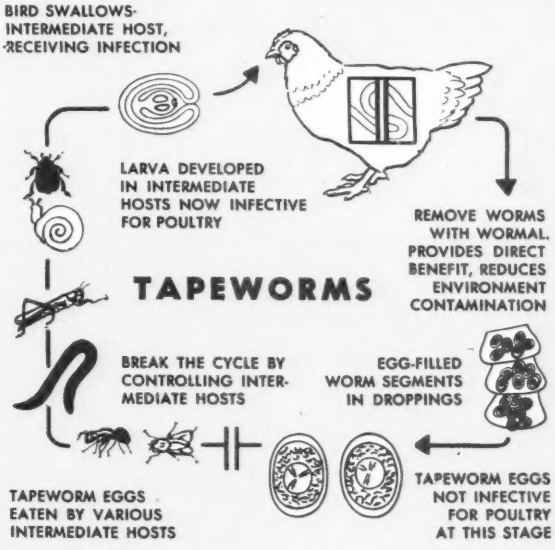
# ye ır, due to many species of poultry worms

Stopping Roundworms is only a <u>small</u> start.

A complete worm control program requires a wormer that "<u>gets all 3</u>" – Tapeworms and Cecal Worms as well as Large Roundworms.




BIRD EATS INFECTIVE EMBRYONATED WORM EGGS, BECOMES INFECTED OR REINFECTED
BREAK THE CYCLE BY REMOVING WORMS WITH WORMAL PROVIDING DIRECT BENEFIT TO BIRD AND REDUCING CONTAMINATION OF ENVIRONMENT
LARVA IN EMBRYONATED EGG
WORM EGGS IN FRESH DROPPINGS
LARGE ROUNDWORMS AND CECAL WORMS
EGGS BECOME EMBRYONATED IN 10 DAYS UNDER FAVORABLE CONDITIONS, MAY REMAIN ALIVE FOR MANY MONTHS
BREAK THE CYCLE BY REDUCING OPPORTUNITY FOR INFECTION. MAINTAIN LITTER OR RANGE IN GOOD CONDITION, AVOID OVERCROWDING


BIRD SWALLOWS INTERMEDIATE HOST, RECEIVING INFECTION
LARVA DEVELOPED IN INTERMEDIATE HOSTS NOW INFECTIVE FOR POULTRY
REMOVE WORMS WITH WORMAL. PROVIDES DIRECT BENEFIT, REDUCES ENVIRONMENT CONTAMINATION
TAPEWORMS
BREAK THE CYCLE BY CONTROLLING INTERMEDIATE HOSTS
EGG-FILLED WORM SEGMENTS IN DROPPINGS
TAPEWORM EGGS EATEN BY VARIOUS INTERMEDIATE HOSTS
TAPEWORM EGGS NOT INFECTIVE FOR POULTRY AT THIS STAGE

**AND HERE'S HOW TO CONTROL WORMS**

DETACH INSERT AND FILE

Dr. Salsbury's

# WORMAL

## THE ONLY COMPLETE POULTRY WORMER

### WORMAL takes the guesswork out of worming

Some worming treatment is necessary, because it is practically impossible to raise birds that are not heavily infected with worms. Unfortunately, no single drug is equally effective against all 3 major types of worms. And few growers are skilled at posting or diagnosis, so that the kind of worms might be incorrectly identified. Thus a grower runs the risk of wasting money by using the wrong worming compound. All this spells out the need for a broad-range wormer, one that gets *all 3 types of worms*. WORMAL is such a wormer. It is the *only* wormer that gets all 3—takes the guesswork out of worming!

### Here's why growers prefer WORMAL granules

1 Wormal is the only feed additive worm that removes large roundworms, cec worms and 6 species of poultry tapeworm

2 Easy to feed. Wormal fits most feedi programs—all mash, or controlled mas and-grain.

3 Wormal is safe, causing no shock or setbac

4 Palatable. Feed mixtures containing Worm are readily eaten by chickens and turke

5 One standard dose for birds of all ag One pound of Wormal treats 250 birds any age. Mix at rate of 20 lbs. per ton mash.

### WORMAL . . . the most effective wormer for chickens, broilers, turkeys

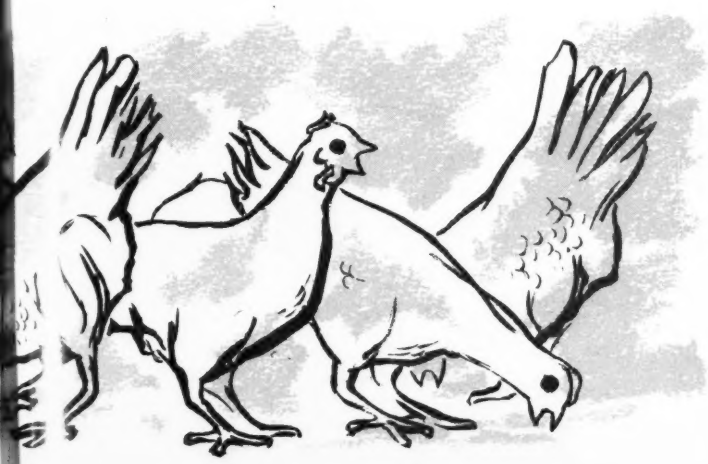
## *in your poultry feeds lets you offer our customers the utmost protection against costly worm damage*

### only WORMAL contains dibutyltin dilaurate, plus piperazine and phenothiazine

These three drugs combine to make the safest, most effective poultry anthelmintic known today. **Dibutyltin dilaurate,** a development of Dr. Salsbury's Laboratories, is available only in Wormal. It is the only flock tapewormer that removes 90% or more of the 6 commonest species of chicken tapeworms—*heads and all.*

Controlled tests show that piperazine removes 95% to 100% of large roundworms from chickens and turkeys. It works fast, is palatable, and does not interfere with normal feed consumption.

Phenothiazine, the third drug in Wormal, is one of the most widely used worming compounds known to veterinary science. It is also one of the most effective—removing 95% to 100% of cecal worms from poultry.



### TREATMENT
### SUPPLEMENTS
### SANITATION

#### Commercial Flocks...

are usually raised on clean range, thus reducing the degree of infection. However, for best results, sanitation should be supplemented by a regular worming program—Wormal at 8, 12, 16 and 20 weeks for maximum worm control.

#### Utility Flocks...

often show a much higher worm infection than commercial birds because not enough attention is paid to clean range and other good management practices. Thus, there is an even greater need for a good worming program. After pullets are housed, Wormal should be used every 30 days if necessary.

#### Turkeys...

Worm infections in turkeys are on the increase, especially where poults are raised on the same range or litter year after year. Wormal Granules keeps worms under control when fed at the rate of one pound to 100 pounds of mash for each 250 birds. For growing birds, feed as the sole ration until consumed.

### WRITE, WIRE OR PHONE

for more complete information on WORMAL. Or, if you wish, a Dr. Salsbury's technical service adviser will arrange to call and personally answer your questions about using WORMAL in your feeds.

DETACH INSERT AND FILE

# These other Dr. SALSBURY'S products can give

# UNISTAT®

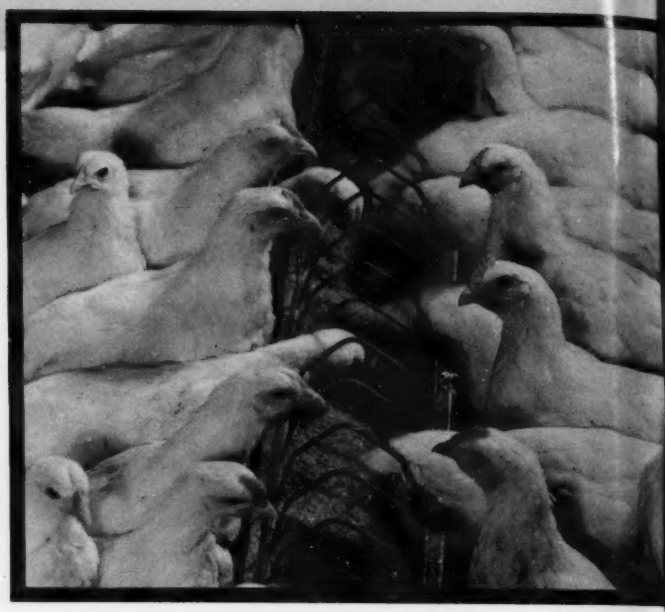
**PREVENTS COCCIDIOSIS BEST**
for chicks, broilers, growing chickens

UNISTAT not only provides superior protection against coccidiosis—it also gives growers other important benefits, such as *better coloring*, *faster growth*, and *increased feed efficiency*. Of these, the last is most important. Birds must make top gains per pound of feed.

**EFFICIENCY UP 10 POINTS**

Thousands of flocks have demonstrated that UNISTAT-fed broilers need *less feed per unit of gain*. One grower (name on request), who raises a million broilers a year, says, "Our feed efficiency has improved more than 10 points over last year and we've had no trouble with coccidiosis. We feel that the coloring, finish, and quality of our birds has been greatly improved withUNISTAT and we're now using it 100%."

**WRITE, WIRE OR PHONE**
for Feed Manufacturer's Guides on 3-NITRO and/or UNISTAT. They answer many questions about the use of these products in your feed.



# 3-NITRO®

POWDER

**THE ARSENICAL OF CHOICE**
for chickens, turkeys, swine

Over half of the commercial broilers raised each year get 3-NITRO in their feed because its use is highly profitable. Certain experimental results have indicated an extra profit of $21.50 per 1,000 birds from the use of 3-NITRO. Laying flocks have averaged 12 extra eggs per hen per year and on ¼ lb. less feed per dozen eggs. 3-NITRO *promotes faster growth, improves feed-efficiency, increases egg production, reduces flock depletion, promotes better feathering* and *coloring*. These are reasons why growers say, "*No other feed ingredient does so much—and costs so little—as 3-NITRO.*"

**LEANER HOGS**

Today's consumer wants lean red meat, not wasty fat. Tests have shown that 3-NITRO reduces backfat and improves carcass leanness. 3-NITRO has long been known for its effect in producing faster, cheaper gains. This new benefit—leaner pork—is attracting even more farmers to 3-NITRO.

# your feeds exclusive profit-making benefits

## POLYSTAT®

### A BROAD-RANGE HEALTH PROTECTANT

for chickens and turkeys

POLYSTAT helps chicks and poults start faster ... grow into stronger, healthier birds, the kind that *return highest profits*. There is less mortality, less sickness, and better all-around health and appearance, when feeds contain POLYSTAT. In addition, POLYSTAT eliminates the need for a separate coccidiostat, a separate wormer, and a separate growth stimulant. These are reasons why thousands of successful growers say there is no other product with the wide range of profit benefits supplied by POLYSTAT.

### IF BLACKHEAD IS NO PROBLEM

... keep birds on POLYSTAT throughout the growing period. However, if protection against blackhead is required, a change to Histostat-50 should be made, as described at right.

### FIND OUT NOW

... more about how to use these Dr. Salsbury's products to build superior turkey feeds. Write, wire or phone for Feed Manufacturer's Guides on Polystat and/or Histostat-50.

## HISTOSTAT®-50

### BEST FOR BLACKHEAD PREVENTION

also promotes finer finish

When poults go on range, feeds containing HISTOSTAT-50 will prevent losses from blackhead. HISTOSTAT-50 should be used earlier if blackhead has been causing trouble in brooder house. Its new, improved formulation permits the active ingredient to do its work more completely and effectively—especially as birds approach market age or maturity. Palatable—turkeys like it. It's economical—2 birds saved more than pays for treating 100 with HISTOSTAT-50. And they finish better, with higher market value.

### CHAMPION TURKEYS RAISED ON HISTOSTAT

Year after year, the champion birds at carcass shows were raised on HISTOSTAT. It's been proved on millions of turkeys. And new HISTOSTAT-50 contains the same proven active ingredient—4-nitrophenylarsonic acid—from the chemical family of arsenicals, which are universally recognized for their growth-stimulating properties.

# *SERVICE...*

## *that helps build better feeds*

### THESE FREE SERVICES ARE YOURS FOR THE ASKING

**AUTHORITATIVE COUNSEL.** Available to you is the counsel of more than a score of Dr. Salsbury's scientists in the fields of poultry and animal health, chemistry, microbiology, protozoology, and helminthology, working with the most modern equipment in one of the largest commercial poultry—and animal—health laboratories in the world. These experts are at your service for any advice you may need regarding feed medication.

**PATHOLOGICAL SERVICE.** Dr. Salsbury's Laboratories offer you the professional diagnostic opinion you may need for providing the proper medicated feeds to cope with unusual flock health problems.

**TECHNICAL SERVICE ADVISERS.** A group of trained specialists, experienced in feed medication, will come and confer with you. They bring the entire technical resources of Dr. Salsbury's Laboratories to your aid.

**SERVICE TRAINING COURSE.** Dr. Salsbury's Laboratories have over 25 years' experience in training dealers, field servicemen, and poultrymen in the essentials of poultry health. Short courses in poultry, broiler, and turkey subjects—taught by leading scientists and educators—can help your staff render a better service.

**SCIENTIFIC INFORMATION SERVICE.** An extensive series of Feed Manufacturer's Guides, bulletins, and reports of research covering practically every field of poultry health, will be sent to you regularly.

**FIELD SERVICE.** One-fourth of Dr. Salsbury's total staff—or about 100 men—are constantly in the field, providing service. These men have an average of 12 years' experience with the Laboratories. They know poultry, and they are always ready to assist you with feed medication.

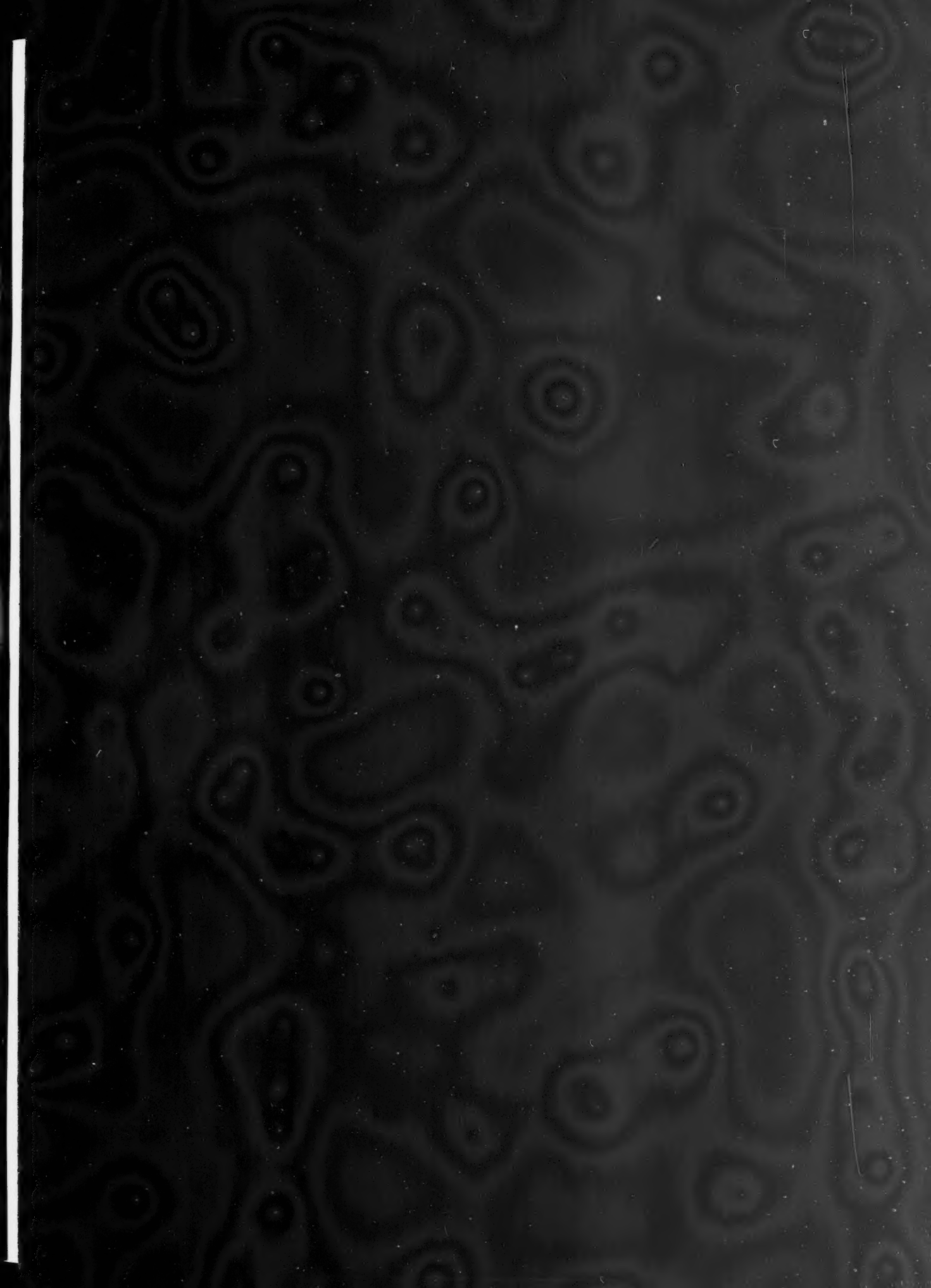
During the many years they have served the feed indu
Dr. Salsbury's Laboratories have developed a field st
experienced men who are fully qualified to help you with
formulation. This staff, like the other services listed he
unequalled in the entire industry. *These men can help you b*
*better feeds.* Shown above is one of the Poultry Short Co
at Charles City. Here dealers, field servicemen, and poultry
get first-hand training in the essentials of poultry health. P
write, wire, or phone for further information. Regardles
your size or location, your request will get immediate
personal attention.

### MEDICATION ALONE IS NOT ENOUGH

Because good husbandry is always necessary for a feed
to do its best work, Dr. Salsbury's current consumer
ments carry this message: PROPER MEDICATION IS
ONE PART OF GOOD FLOCK OR HERD MANAGE
FOR BEST RESULTS, PRACTICE SOUND FE
HOUSING, SANITATION AND PEST CONTRO

Dr. SALSBURY'S Dr. S LABORATO
Charles City Iowa

NATIONWIDE SERVICE TO THE FEED INDUSTRY



# Strong Dealer Program Important to Progress Of Big Texas Feed Firm

**A major southwestern formula feed manufacturer which believes it operates the largest feed mill in the world under a single roof credits much of its growth success to a highly-efficient dealer organization. The year 1958 was the greatest tonnage-wise in company history.**

By FRIEDA & SAM HYATT
*Reported From Fort Worth, Tex.*

Reportedly the largest single feed plant on the globe, Burrus Feed Mills is co-managed by Wesley E. Ballmann and Charles W. Harris. This newly-appointed team represents a vigorous outlook on the company's plans and methods. "We believe in selling through a dealer organization," observed Wesley Ballmann. We feel we can give the customer better service by taking this route."

This well-known feed mill, located on the northwestern outskirts of Fort Worth, maintains a complete concentrate program for its dealers. It encourages its dealers to put in mixers and grinders. Co-Manager Ballmann explained, "The dealer thus is able to compete with the feed manufacturers who are going direct and at the same time he has quality control. Our laboratory and research departments assist dealers in keeping quality on a top-notch level."

### Dealer Financing

The Burrus Feed Mills dealer organization is further strengthened through making finance programs available to them. The dealer, in turn, can make an attractive finance program offer to the consumer. This covers swine, laying hens, broilers, and turkeys. To back up this promotion and merchandising program, Burrus furnishes pamphlets and manuals outlining in detail the feeding programs growers in these respective fields should follow to do an A-1 feeding job.

Dealers are aided in their advertising coverage. This is in the form of a tightly-knit radio program provided dealers in the trade area served by Burrus Mills.

Managers Ballmann and Harris are proud of the 300-dealer family serviced by the mill in Texas and parts of Oklahoma, Arkansas, Louisiana, Mississippi, New Mexico, and Puerto Rico. The Burrus feed plant in Cuba has a long and excellent production record.

### Decentralizing Trend

Decentralization is rated as all-important by the executives of Burrus. A new mill has been opened in Austin, 190 miles due south of Fort Worth. The managers point out this is the firm's answer to operating on a competitive basis and if the Austin mill meets the company's expectations other mills will be opened throughout the country.

"What Charles Harris and I are especially proud of," noted Wesley Ballmann, "is the quality of our feeds. We police this very closely. We challenge and invite the customer to use our feed on a competitive basis and to prove to himself Burrus feed products will perform as good as or better than any other."

### Sales Force

Twenty-three salesmen operate in the area served and have the title of territory managers. Each territory manager is assigned from 10 to 20 counties, depending on the location. He is in complete charge and conducts his activities as if he were in business for himself.

Co-Manager Ballman stated, "The future of the industry looks good. Our feed sales are increasing steadily and prove to us that if a dealer has quality feed, service, a financing program, good advertising to back him up, bulk facilities, and an efficient sales organization, both he and the mill supplying him will get a fair share of the feed business.

"At the same time feeders who remain in the business become larger and larger. As competition becomes keener the customer is made aware that he must continue always to strive

*(Continued on page 50)*

CO-MANAGERS WESLEY BALLMAN & CHARLES HARRIS
"We believe in selling through dealers."

# STABILITY

## A Superior Dry Vitamin A Feed Supplement

**PROVEN STABILITY:** Dawe's FIXTAY retains a high degree of potency over extended periods under normal and elevated temperature and humidity conditions. Even in high mineral mixtures, containing as much as 40% trace minerals, Dawe's FIXTAY maintained this remarkable stability:

| MIXTURE No. | No. 1 | No. 2 | No. 3 | No. 4 | No. 5 | No. 6 |
|---|---|---|---|---|---|---|
| Percent of Vitamin A remaining after 3 months | 98.6 | 97.8 | 95.4 | 98.6 | 95.6 | 95.4 |

**COMPLETE AVAILABILITY:** Biological tests prove Dawe's FIXTAY is fully available to the animal for early absorption in the digestive tract.

**UNIFORM DISPERSION:** Dawe's FIXTAY is of a particle size and shape which readily disperses and remains uniformly distributed.

Dawe's FIXTAY is available in all practical potencies. Write for samples and quotations on the potency of your choice.

**World's Oldest and Largest Specialists in Vitamin Products for Feeds**

Dawe's

*Plants and warehouses strategically located throughout the United States to serve you without delay.*

**DAWE'S LABORATORIES, INC**
**4800 South Richmond Street**
**Chicago 32, Illinois**

FOREIGN OFFICES:
BELGIUM—13 Courte rue des Claires, Antwerp ITALY—Corso Magenta 81/83, Milan MEXICO—Sierra Leona 755, Mexico 10, D. F. VENEZUELA—Apartado 3050, Caracas

# Feed Nutrition Digest

Edited by C. W. SIEVERT
*Nationally-Known Feed Consultant*

**Unusually valuable digests of current nutritional research in terms every feed man can understand and use. Opinions expressed are those of the reviewer and are not necessarily shared by The Feed Bag.**

**Evidence continues to crop up regarding phosphorus sources. This time it applies to swine.**

**Title:** *Effect of Feeding Different Combinations of Soft Phosphate With Colloidal Clay and Dicalcium Phosphate With and Without Added Fluorine for Growing-Finishing Swine.*
**Authors:** S. N. Aldinger, N. C. Speer, C. C. Ashton, V. W. Hays, and D. V. Catron (Iowa Agricultural Experiment Station).
**Publication:** *Animal Science,* Vol. 18 (May, 1959) pp. 555-60.
**Digest:** Starting with pigs weighing 75 pounds, a 14 per cent protein ration was fed to 150 pounds body weight and a 10 per cent ration to 200 pounds. The change in protein was made by varying the proportions of corn and soybean oil meal. All rations were adequately balanced with vitamins and trace minerals. The 14 per cent rations contained 0.8 per cent calcium and 0.6 per cent phosphorus, and the 10 per cent rations contained 0.7 per cent calcium and 0.5 per cent phosphorus. There were five different feeds prepared in which the added phosphorus was from two sources — dicalcium phosphate, soft phosphate, and combinations of the two — keeping the total added phosphorus the same in all of them.

"Equal quantities of dicalcium phosphate and colloidal phosphate were obtained from three different producers of each and the products of each were blended before incorporation into the experimental rations as a precautionary measure against heterogeneity of the material from any one source."

Three replications were used in the study.

"Fifty-four crossbred pigs were fed from 75 to 200 pounds body weight to study the effects of 1) varying proportions of soft phosphate with colloidal clay (colloidal phosphate) and dicalcium phosphate as sources of supplemental phosphorus and 2) adding sodium fluoride to the ration to give a calculated fluorine content in the ration equivalent to that when colloidal phosphate supplied 100 per cent of the supplemental phosphorus.

"Increasing the levels of colloidal phosphate from zero to 4.0 per cent of the ration (zero to 100 per cent of the supplemental phosphorus) resulted in a statistically significant linear decrease in rate of gain and feed efficiency when no sodium fluoride was added to the rations.

"Thre was an indication of a factor or factors other than fluoride in the colloidal phosphate which contributed to the depressing effect of colloidal phosphate on gains and feed conversion."
**Comment:** The authors state that no gross symptoms of fluorine toxicity were noted in any of the pigs.

The best gain and feed per pound of gain was with dicalcium phosphate alone, the amounts being 1.97 pounds and 3.44 pounds, respectively. When a 50-50 mixture of dicalcium phosphate and colloidal phosphate was used the daily gain was 1.89 pounds and the feed per pound gain was 3.58. The amount of feed consumed per day was 6.76 pounds (for 100 per cent dicalcium phosphate), 6.72 pounds for a 75-25 mixture, and 6.77 pounds for the 50-50 mixture of dicalcium phosphate and colloidal phosphate.

Rate of gain, feed efficiency, and amount of feed eaten per day for the 25-75 mixture (75 per cent colloidal phosphate) was 1.72, 3.88, and 6.64 pounds, respectively. For the pigs getting 100 per cent colloidal phosphate, these figures were 1.40, 3.95, and 5.58. It would seem that a 50-50 mixture of dical and colloidal phosphate isn't bad, which is not too different from results with chicks reported by Johnson et al (1953), which showed that the cheaper phosphate could supply a part of the supplemental phosphorus.

In the opinion of the Dumb Dutchman if you have the necessary warehouse room to carry two sources of phosphorus then you can use some soft phosphate (or call it colloidal phosphate if you want to) along with some high-quality phosphate such as dicalcium phosphate or good steamed bone meal — but don't go too heavy on the soft phosphate even though it is comparatively low in cost. Play it safe — and especially so in starting feeds and other critical feeds (early growth and reproduction).

* * *

**Here is some further phosphorus data using chicks, this from researchers at Lafayette, Ind.**

**Title:** *Soft Phosphate in Chick Rations.*
**Authors:** E. E. Gardiner, H. E. Parker, and C. W. Carrick (Purdue University).
**Publication:** *Poultry Science,* Vol. 38 (May, 1959) pp. 721-27.
**Digest:** Using corn-soy high-energy rations, the authors summarize their work thusly:

"Experiments were conducted to evaluate the posible reasons why soft phosphate will not support chick growth comparable to that obtained with dicalcium phosphate. Data from these experiments indicated that neither the fluorine nor the clay in this product was the factor involved. A more plausible explanation of the results obtained, based on fecal phosphorus analysis, would be that the phosphorus in soft phosphate was not as available to the chick as that in dicalcium phosphate. The data indicated that a portion of the phosphorus in soft phosphate was utilized by the chick.

"Sodium fluoride reduced chick growth when it supplied 0.05 per cent fluorine to the diet. No apparent growth depression occurred with cal-

cium fluoride at any of the levels used."

**Comment:** No further comment.

* * *

**Fats and pigmentation are discussed in the following paper.**

**Title:** *Variation in the Effects of Fat Supplements on Broiler Pigmentation, Growth, and Feed Conversion.*

**Author:** D. S. Carver (Larro Research Farm).

**Publication:** *Poultry Science,* Vol. 38 (January, 1959) pp. 71-76.

**Digest:** Three separate experiments were conducted, using 18 pens of 24 chicks (half male and half female) and each diet was fed to three pens. The birds were fed in batteries — starting batteries for four weeks and finishing batteries to market weight. Arbor Acre White Rocks were used in the first experiment, a New Hampshire-Silver cross in the second, and a Vantress-Arbor Acre cross in the third.

The results showed that certain samples of yellow grease, No. 1 tallow, hydrolyzed animal and vegetable fat, and methyl esters of vegetable fat reduced pigmentation.

The factors present in some fats which depressed pigmentation varies in level since some samples of yellow grease and hydrolyzed animal and vegetable fat did not depress pigmentation. Prime tallow was used as the standard in all three experiments, and the feeds containing prime tallow were always equal or superior in pigmentation to that produced by the feeds containing other fats.

"The sample of methyl esters depressed growth, feed conversion, and pigmentation while the pigment-inhibiting component present in certain samples of yellow grease, No. 1 tallow and hydrolyzed fat had no adverse effects on growth and feed conversion."

**Comment:** In looking over the data we also see in the first experiment that yellow poultry grease was used alone and in combination with prime tallow. It produced excellent growth, feed conversion, and pigmentation.

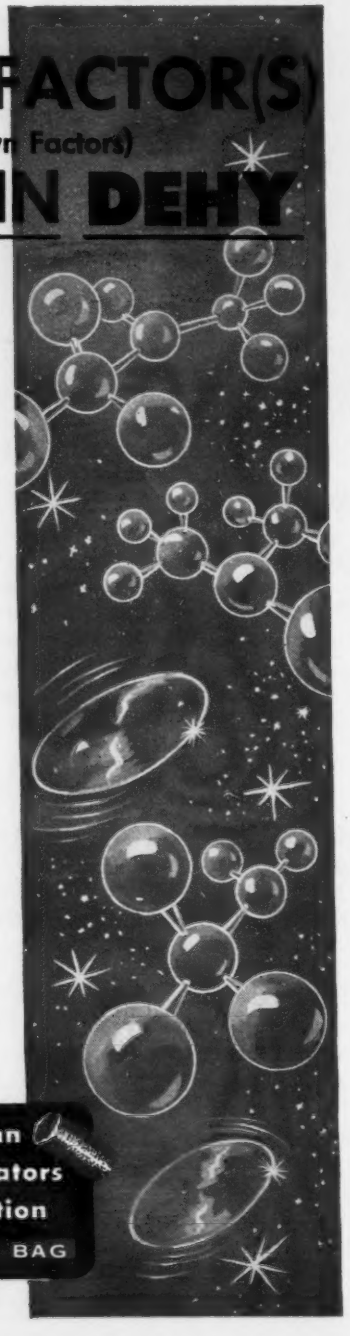
In these experiments growth was good (weighing from 2.71 to 2.94 pounds at eight weeks for birds of both sexes), and feed conversion on the good fats was also good (1.92 to 2.09 pounds feed per pound gain). For a fat not quite so good the feed conversion was 2.2. In one experiment the birds were nine weeks old and their weights were from 3.38 to 3.5 pounds with a feed conversion of two to 2.09.

Commercial-type feed was used, the only variant being the kind and amount of fat. In the first experiment (18 pens) the fat level was four per cent. In the second (18 pens) fat was used at a seven per cent level, and in the third it was six per cent.


# UNIDENTIFIED FACTOR(S)

**(Plus Dozens of Known Factors)**

# PUTS POWER IN DEHY



**While man-made satellites and interspace missiles sweep billions of miles into Infinity, scientists remain baffled by the miracle growth powers in DEHY (dehydrated alfalfa or grass).**

**We don't know what it is, but we know what it does...**

**Scientists agree that Dehy contains an unknown factor essential for optimal growth and reproduction. In a recent report on a least-cost broiler formula, Hutton and others (ARS, USDA) took note of the value of alfalfa meal as a source of an unknown growth factor by specifying a minimum level of 2% *regardless of cost.* Other tests have shown the existence of an unknown factor in Dehy which is essential for *maximum hatchability.***

**(Touchburn, Poultry Sci. 36:591, '57)**

**The challenge of the unknown remains, but this we know...**

**Scientists agree that Dehy is an economical source of vitamins A, E, and K, riboflavin, and particularly xanthophyll. Ferguson and others at Texas A & M calculated that 5% of Dehy added $10.08 worth of xanthophyll to 100 lb. of one diet at a cost of 94c.**

**For a better, low cost POWER PRODUCER—in all your poultry feeds—use DEHY.**

**AMERICAN DEHYDRATORS ASSOCIATION**

**Board of Trade Building, Kansas City 5, Mo.**

Write for FREE Report...

ADA American Dehydrators Association

PASTURE IN THE BAG


## Arsenicals Not Harmful, Dr. Salsbury's Claims

There is in existence substantial evidence that organic arsenicals do not impose hazards to the food supply from the standpoint of drug residues in the tissues of slaughtered animals or in their products, according to a statement made recently by Dr. Salsbury's Laboratories, Charles City, Iowa.

The firm said that additional evidence to prove this claim will be submitted to the Food & Drug administration in the near future. It said that it hopes that the concern about arsenicals and their relationship to the feed and agricultural industries, and ultimately the consuming public, soon will be dispelled.

The firm also stated its conviction that 3-nitro-4-hydroxyphenylarsonic acid is not harmful to chickens or swine, or to the human population consuming pork, poultry or other products.

KRAFT BAG CORPORATION, through correct construction of your multiwall shipping sacks, will reduce seepage and spoilage of contents while minimizing your shipping and storage problems.

*If your product fits into a bag –*
*let us make the bag to fit your product!*

# KRAFT BAG CORPORATION

*Gilman Paper Company Subsidiary*

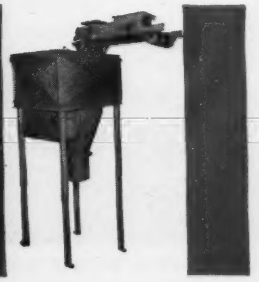
**630 Fifth Ave., N.Y. 20, N.Y. • Daily News Bldg., Chicago 6, Ill.**

*Integrated mills at St. Marys, Georgia and Gilman, Vermont*

Gilman PAPER Co.
• St. Marys Kraft Corp.
• Gilman Twine Div.
• The Gilbound Corp.
• Kraft Bag Corp.

**KRAFTPACKER**

Open Mouth Bag Filling Machine provides maximum accuracy and speed. May we tell you about our simple steel models? Remarkable in performance. Surprisingly low in price.



☐ We are interested in improving our bag.
☐ We are interested in your Kraftpacker.

FB

NAME OF COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____ PRINCIPAL_____

PRODUCT MFD._____

## —Burrus Feed Mills

*(Continued from page 45)*

to use only quality feeds and sound feeding programs in order to show a profit."

Mr. Ballmann noted also that with population increasing all the time, more feed is required to produce more food products.

### Poultry Feed Leads

Burrus Feed Mills represents a diversified program of selling, with poultry feed making up two-thirds of the firm's sales. The company policy is to place responsibility for specialized departments in the hands of specialty men.

Caddo Wright is the Burrus livestock specialist. He works only with livestock and assists dealers and consumers with livestock problems. This expert has an animal husbandry degree from Texas A & M, served with American Cyanamid Co. as a veterinary representative, and was manager of Green Valley Farms at San Marcos, Tex., where as many as 12,000 head of cattle are fed at a time.

Randy Woodward is in charge of advertising and promotion. He works closely with Clark, Dunigan & Huffines advertising agency in Dallas. This firm handles the Burrus account.

Jerry Price is in charge of poultry finance and new dealers. He is a graduate in agriculture of Texas Tech and formerly was with American Cyanamid Co. in its feed supplement division.

Henry Hasse is assistant sales manager for Burrus. He formerly held the position of sales manager of another large feed manufacturing concern in the Southwest and is also a graduate of Texas A & M. Mr. Hasse takes care of feed sales and sales personnel at the Fort Worth mill.

### Plant Layout

The Burrus Feed Mills plant was constructed in 1948. It was engineered and designed by Jones-Hettelsater Construction Co. of Kansas City. The mill has a rated capacity of 100 tons an hour. The plant is equipped to receive all ingredients in either bulk carloads or bulk truck loads. A loading dock at the west side of the mill can accommodate 15 trucks at a time. Three line mixing operations in a continuous flow turn out mash, dairy, and scratch at the rate of 13 bags per minute.

Charles Harris emphasized, "The mill can produce feed of the same consistent quality and of the same type, day in and day out. There is no hit-or-miss to the operation. This is what the customer wants. Every raw ingredient is checked by our chemist and all ingredients are analyzed prior to unloading.

"They must meet the requirements set up by Russell Reed, director of feed nutrition for Burrus Mills. As the feeds are being manufactured samples are pulled and submitted to the lab for analysis," he explained.

Manager Harris underlined, "No one in the plant can deviate from a formula once it is set up. Before the product is offered for sale a complete analysis is run to see if it meets the requirements prescribed by Mr. Reed."

Most of the feed milled moves out in carload lots. This accounts for 75 per cent of the entire volume. The remaining 25 per cent is moved by truck. Burrus Feed Mills does not concentrate on using a large fleet of trucks. It offers dealers in the immediate vicinity feed pickups at the mill.

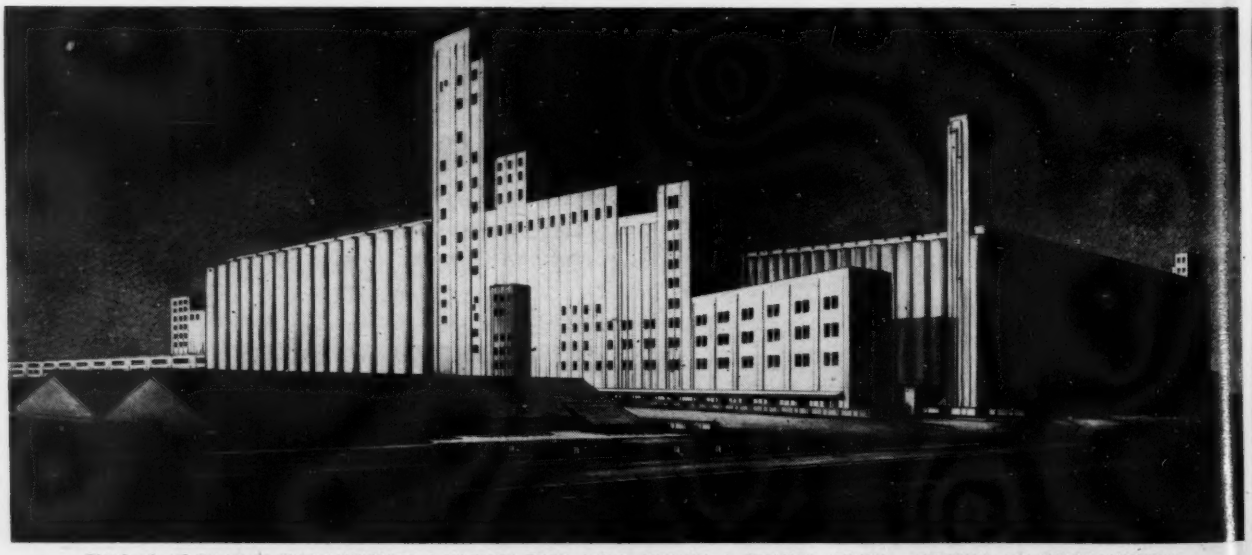
HENRY HASSE JERRY PRICE
CADDIE WRIGHT RUSSELL REED

The storage capacity of the elevator is 8½ million bushels.

Burrus Feed Mills is a member of the American Feed Manufacturers association, the Midwest Feed Manufacturers association, the Grain & Feed Dealers National, the Texas Grain & Feed association, and the Texas Feed Manufacturers association.

Ray Stockard, the general mill foreman, has been with the firm since 1948, assisting in setting up the blending line at that time. Mill superintendent is A. W. Bauserman. Jimmy His is

*(Concluded on page 55)*



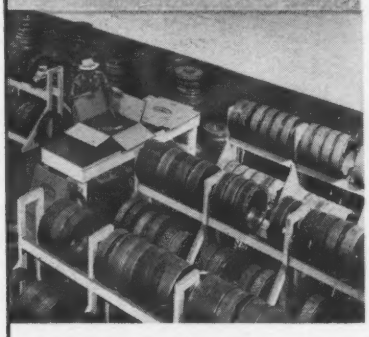
THIS IS PROBABLY THE WORLD'S LARGEST FEED MILL UNDER A SINGLE ROOF — BURRUS OF FORT WORTH.

# You Name it We've Got it




**Dies Illustrated**

1. Laboratory Model
2. Master Model
3. Hi-Molasses
4. Hytlo
5. Heavy Duty
6. Century 75
7. Century Wide-Face



## You're looking at some of the dies used in the most complete line of pellet mills available today

Until 1931, when California introduced its "Heavy Duty" Model Pellet Mill, no one had produced a commercially acceptable pelleting machine.

This was it. This was the machine that first made pelleting profitable. It was the first to use rollers and steel dies in the poultry pellet sizes. And at low cost. Many loyal boosters still insist that the "Heavy Duty" is the best of *all* machines.

Today, you can choose from eight basic California Pellet Mills and matching dies . . . designed specifically for *your* pelleting plans, whether for small volume laboratory work or large scale production. *At California, you name it – we've got it!*

***ORDERS FILLED FAST FROM LARGE CPM DIE STOCKS***

Two CPM die factories keep production well above customers' needs to guarantee prompt filling of every order. Large warehouses at three "Main line" locations assure you of pellet mill service at its best!

CPM — CALIFORNIA PELLET MILLS

**CALIFORNIA PELLET MILL COMPANY**

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101 E. 15th Ave., North Kansas City 16, Missouri

Sales & Service Representatives also in: Albany · Birmingham · Columbus · Davenport · Denver · Fort Worth · Los Angeles · Mexico City · Minneapolis · Oklahoma City · Omaha · Richmond · Seattle · St. Louis · Toronto · Winnipeg. Also manufactured, sold and serviced by Henry Simon Ltd., Stockport, England

# FROM ONE EXPERIMENT

## How an independently conducted supplied important comparative

## 1. THE INADEQUACY OF CAROTENE AS A SOURCE OF VITAMIN A

**THE STUDY** Five lots of day-old single comb White Leghorn chicks were fed a basal diet containing appreciable amounts of pro-vitamin A in the form of yellow cornmeal (50% of diet) and alfalfa meal (2.5%). One lot received the basal diet only—four lots graded levels (600, 1200, 1800, 2400 USP units per lb.) of vitamin A derived alternately from Nopcay Type V and fish liver oil.

*Less than at hatching time!*

| Lot No. | Diet and/or Product Fed | Level of Vitamin A Fed (IU per lb.) | | Total A Ingested | 5-wk. liver storage (IU/liver) | % Ingested A Stored in Liver |
|---|---|---|---|---|---|---|
| | | from carotene | from preformed A | | | |
| 1A | Basal diet only[1] | 1850[2] | 0 | 3570[3] | 32 | 0.9 |
| B | Basal diet only | 1850 | 0 | 3535 | 41 | 1.2 |
| 2A | Nopcay Type V | 1850 | 600 | 1213[4] | 96 | 7.9 |
| B | Fish liver oil | 1850 | 600 | 1167 | 54 | 4.6 |
| 3A | Nopcay Type V | 1850 | 1200 | 2381 | 229 | 9.6 |
| B | Fish liver oil | 1850 | 1200 | 2515 | 92 | 3.7 |
| 4A | Nopcay Type V | 1850 | 1800 | 3670 | 585 | 15.9 |
| B | Fish liver oil | 1850 | 1800 | 3634 | 131 | 3.6 |
| 5A | Nopcay Type V | 1850 | 2400 | 5064 | 915 | 18.1 |
| B | Fish liver oil | 1850 | 2400 | 5326 | 237 | 4.4 |

*[1]Contained 50% yellow cornmeal and 2.5% alfalfa meal as carotene sources. [2]Conservative estimate. [3]From carotene sources. [4]Based on preformed vitamin A only (does not include amount derived from corn and alfalfa meals.)*

**DISCUSSION** 1. *Carotene.* The inadequacy of carotene is strongly emphasized in this study. The basal diet was a balanced diet, not a vitamin-A-deficient diet. It contained 50% yellow cornmeal and 2.5% alfalfa meal. This is close to the maximum possible carotene that can be included in a balanced diet. In spite of this relatively large amount of pro-vitamin A, however, the ration failed to produce any increase in vitamin A activity in the liver. In fact, though the weight of the chicks at the end of 5 weeks had increased to about 10 times that at birth, the livers did not even contain the vitamin A they had to begin with (60-80 IU is normal).

It is evident that chicks convert carotene to vitamin A very inefficiently. Under stress conditions such a diet provides no safety factor whatsoever.

Further studies are to be made available on this phase of nutrition. But as an interim report, this study makes an important point:

**CONCLUSION NO. 1** Carotene is poorly utilized and is of very limited value as a vitamin A source for chicks

Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

# . . . A DOUBLE RESULT

## study by a Midwest feed manufacturer*
## data on vitamin A utilization . . .

**Name on request*

## 2. THE OUTSTANDING EFFECTIVENESS OF NOPCAY® TYPE V AS A SOURCE OF VITAMIN A

**THE STUDY** Five lots of day-old single comb White Leghorn chicks were fed a basal diet containing appreciable amounts of pro-vitamin A in the form of yellow cornmeal (50% of diet) and alfalfa meal (2.5%). One lot received the basal diet only—four lots graded levels (600, 1200, 1800, 2400 USP units per lb.) of vitamin A derived alternately from Nopcay Type V and fish liver oil.

*Twice as effective!*

| Lot No. | Diet and/or Product Fed | Level of Vitamin A Fed (IU per lb.) | | Total A Ingested | 5-wk. liver storage (IU/liver) | % Ingested A Stored in Liver |
|---|---|---|---|---|---|---|
| | | from carotene | from preformed A | | | |
| 1A | Basal diet only[1] | 1850[2] | 0 | 3570[3] | 32 | 0.9 |
| B | Basal diet only | 1850 | 0 | 3535 | 41 | 1.2 |
| 2A | Nopcay Type V | 1850 | 600 | 1213[4] | 96 | 7.9 |
| B | Fish liver oil | 1850 | 600 | 1167 | 54 | 4.6 |
| 3A | Nopcay Type V | 1850 | 1200 | 2381 | 229 | 9.6 |
| B | Fish liver oil | 1850 | 1200 | 2515 | 92 | 3.7 |
| 4A | Nopcay Type V | 1850 | 1800 | 3670 | 585 | 15.9 |
| B | Fish liver oil | 1850 | 1800 | 3634 | 131 | 3.6 |
| 5A | Nopcay Type V | 1850 | 2400 | 5064 | 915 | 18.1 |
| B | Fish liver oil | 1850 | 2400 | 5326 | 237 | 4.4 |

*[1]Contained 50% yellow cornmeal and 2.5% alfalfa meal as carotene sources. [2]Conservative estimate. [3]From carotene sources. [4]Based on preformed vitamin A only (does not include amount derived from corn and alfalfa meals.)*

**DISCUSSION** 2. *Preformed Vitamin A (Nopcay Type V vs. Fish Liver Oil).* This study provides excellent substantiating evidence of the superior biological effectiveness of Nopcay Type V over fish liver oil (both are sources of preformed vitamin A). Although each of these products was added to a basal diet *containing appreciable levels of carotene,* the data above are reported on the basis of preformed vitamin A intake only. This is done to present a clearer indication of the relative performance of Nopcay Type V and fish liver oil. It is obvious that the very low level of liver storage due to carotene intake would have almost no effect on the overall picture.

An interesting comparison can be made of the results of Nopcay Type V fed at half the quantity of fish liver oil. Nopcay Type V fed at the 600-unit level compares favorably with fish liver oil at 1200. Nopcay Type V at 1200 matches fish liver oil at 2400.

**CONCLUSION NO. 2** Micratized® Nopcay Type V is an unusually effective source of vitamin A for chicks, ranking far above carotene and fish liver oil in this respect

**NOPCO CHEMICAL COMPANY**

GENERAL OFFICES: 60 Park Place, Newark, N.J. PLANTS: Harrison, N.J. • Peoria, Ill. • Richmond, Calif.

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# distinguish between good and bad bacteria?

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Baciferm is the supplement that contains the extraordinary antibiotic zinc bacitracin. More and more feed manufacturers are adding it to their poultry and swine feeds.

The big reason is its "Selective Action." That is zinc bacitracin's unique ability to select its targets —to control the dangerous bacteria in the intestinal tract *without harming the beneficial bacteria* that produce valuable nutrients.

Baciferm's zinc bacitracin is bactericidal. That means that it *kills* dangerous bacteria—does not build up resistant strains. As you have probably heard, this is not the case with some older antibiotics such as streptomycin and the tetracyclines. Because they are bacteriostatic, they don't kill but just slow down the dangerous pathogens. Result: these older antibiotics can build up resistant strains of bacteria over the years, and no longer seem to do the job they were once so good at.

Many feed manufacturers have taken positive steps to insure against this growing risk. They've switched to Baciferm. How about you? To help you decide, get all the facts, all the feeding trial data, all the university test evidence. Let us prove to you that you gain with Baciferm, the antibiotic supplement that gives your feed "Selective Action."

**Be sure your feeds contain**

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ZINC BACITRACIN ANTIBIOTIC SUPPLEMENTS

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260 Madison Ave., New York 16, N. Y. • In Mexico: COMSOLMEX, S. A., Mexico 7, D. F. • CANADIAN SALES REPRESENTATIVE: Norman Stark

## Burrus Feed Mills

*(Continued from page 50)*

t uck foreman and warehouse loading f reman. The mill employs 55 hourly e nployes and four salaried workers.

The Texo brand of feed is featured nd includes a complete line of cattle, og, and poultry rations. Foreman tockard observed, "The continuous-low system is used in the mill and it is esigned for volume output. We run full eight-hour shift from eight a.m. o 4:30 p.m. The night crew works rom 4:30 to 12:30 and its primary as-ignment is to finish up cars. The cars re sealed and made ready to ship. The oading and unloading operations are carried on during the day shift."

All ingredients, including grain, are brought in by rail car and truck in bulk. Bulk feed ingredients are received at the north side of the mill. A power shovel drag is used for unloading box cars together with a Fuller air system.

### Mixing Lines

There are three continuous mixing lines and the volumetric type of percentage feeders is used. The feeders are set up percentage and are checked continuously by the line man for accuracy.

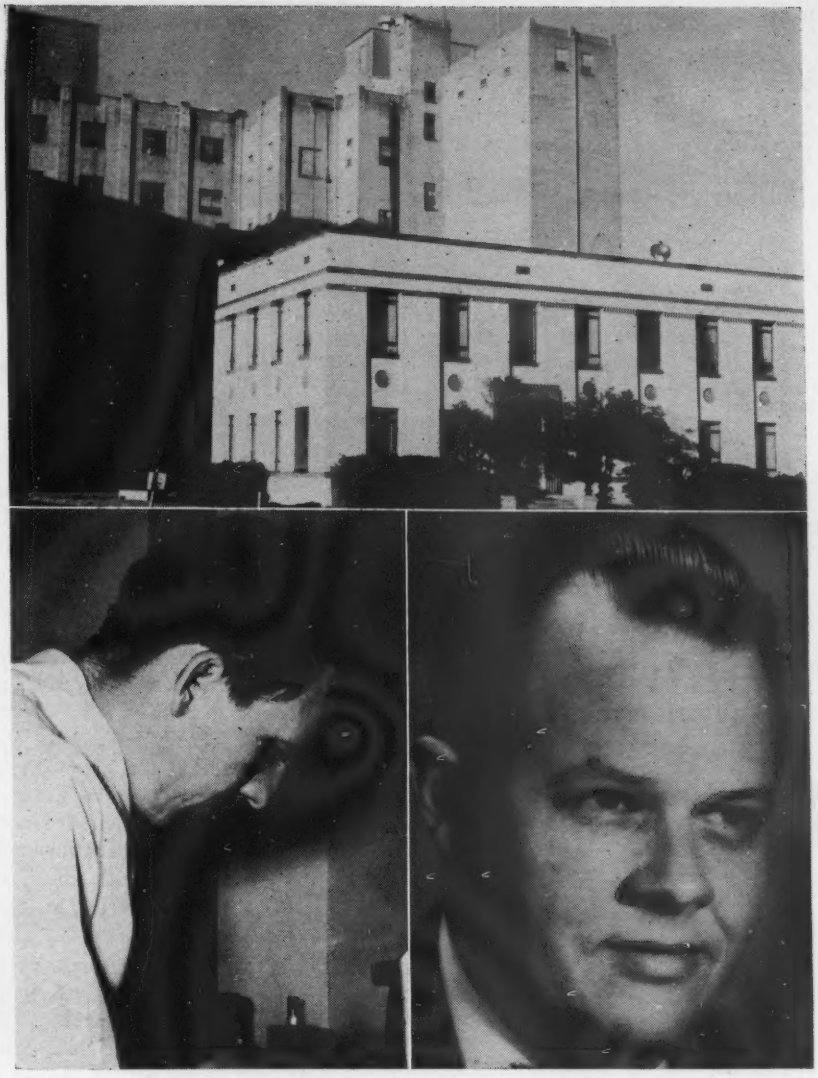
Flow for poultry feed begins with the feeders starting simultaneously. At the same time the ingredients fall on a conveyor belt. They are elevated to the eighth floor, then go through two gyrating sifters. These extract any foreign materials from the feed.

The flow continues through an S. Howes horizontal mixer. Here materials such as liquid tallow are added. The feed then goes either to the mash pelleting bins or down through another high-speed mixer.

Next step is the packing scale, where the feed is packaged. It is closed, sewed, and advances to a conveyor belt. The feed is finally carried 1,000 feet to where it is loaded in box cars or else palletized for warehouse stock.

Equipment inventory includes seven 50-horsepower California pellet mills; four Jacobson hammer mills (three on the first floor and one in the basement); three belt-type Richardson scales; two Richardson duplex automatic scales; two Richardson grain scales; four S. Howes horizontal mixers; and an S. Howes truck scale. A bulk loading system is being installed over the truck scale.

The mill is made entirely of concrete. All spouting is metal. A handsome two-story office building contains executive offices, auditing, mailing, laboratory, and research areas.



**MODERN offices of Burrus are backgrounded by the impressive mill superstructure. Chemist Dean Mingus and Randy Woodward, in charge of advertising and promotion, are key members of the Fort Worth (Tex.) team.**

Light Crust Flour Mill, operated by the Burrus organization, is adjacent to the feed mill. The huge elevator handles grain from both the flour and feed mills.

Burrus Feed Mills has an excellent employer-employe record. Many workers have a service record of from eight to 10 years.

### Others on Staff

Dean Mingus is control chemist for the firm. He also serves as microscopist. Maintenance foreman is Earl G. Jones, a veteran of 17 years with the organization and an expert trouble-shooter. Mr. Jones can detect trouble before it starts, maintain equipment in first-class working order and at a minimum cost due to his experience.

**Burrus Feed Mills, with efficient personnel at all levels, and a dealer organization that achieves control in merchandising, quality of feed, and prudence in financing for the customer, seems destined to reach new heights in sales and earnings.**

## Peavey Announces Service Improvement Winners

Winners of Peavey Feed Mills' service-improvement program have been announced by the Minneapolis firm. The dealers are:

Nelson Feed Co., Houston, Minn.; Lillemoe Feed & Supply, Montevideo, Minn.; Spindler Mill, Stratford, Wis.; Osland Produce, St. James, Minn.; Benson (Minn.) Hatchery; Williams & Schwalm, Chamberlain, S. D.; Mulso Feed Service, Ormsby, Minn.; Champlin (Minn.) Feed Store; and Peavey Elevators at Secaca, S. D., and Henderson, Minn.

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Specifide's two **new** multiple-purpose DYNA-FERM pre-mixes supply **complete** fortification for all swine and poultry rations . . . and at lower cost than ever before. **Here's why DYNA-FERM MP pre-mixes belong in your modern feeds:**

1. Just a few pounds fortifies a ton of feed with essential vitamins, antibiotics, minerals, antioxidants, U.G.F. and Feed Efficiency factors.
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Plants at Indianapolis and Des Moines
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# Custom Mix

By BRUCE W. SMITH

This is being written as we pack our bags and cameras for a three-week trip to Great Britain and Western Europe. We shall be visiting feed manufacturers, ingredient producers, university researchers, and government agriculture officials in six nations and will report on our conversations in future issues of The Feed Bag. Some of Europe's most prominent feed men will be our hosts, including a number of members of the American Feed Manufacturers association. Our travels will take us to Scotland, England, the Netherlands, Germany, Denmark, Sweden, and Norway. Our first report will appear in the August issue.

Many industry members are on the continent on business this summer, including **E. F. Dickey,** president of Honeggers' & Co., and **Dr. Harold Wilcke,** assistant director of research for Purina. Scoop is participating in the annual fair at Poznan, Poland.

The army chemical corps has honored Vice President **W. Ward Jackson** of Commercial Solvents Corp., New York City, for his service to the corps. Maj. Gen. **Marshall Stubbs,** chief chemical officer, presented Mr. Jackson with a plaque and citation in ceremonies held at Edgewood, Md.

At Nopco Chemical Co., Newark, N. J., 10 veteran employes have been initiated into the firm's 15-25 Year club. An enviable 26 per cent of the firm's personnel now qualifies for club membership. Executive Vice President **G. D. Davis** holds the top mark for continuous service with Nopco — 43 years.

How many women operate their own business in or related to the feed industry? Miss **Mavis Whitledge,** head of Mavis Co., Peoria, Ill., is one. She directs her own ingredient and animal health supply company.

**Ron F. Kennedy,** vice president of F. H. Peavey & Co., Minneapolis, and former feed industry association executive, served as June dairy month chairman for the state of Minnesota. Serving on the distaff side was Mrs. **Orville Freeman,** wife of the Gopher state governor.

Merck & Co.'s agricultural advertising chief, **H. George Wolfe,** has been named chairman of the Association of National Advertisers' chemical group. George is widely acclaimed as a philatelic expert.

**Les G. Beardsmore,** advertising manager of Ultra-Life Laboratories, Inc., East St. Louis, Ill., has come up with a device to insure personal comfort when the air-conditioning gets too cold — he has a small portable electric heater for under-the-desk warmth.

A prominent Kansas State University grain expert, **Max Milner,** has been named to a post as senior food technologist for the United Nations children's emergency fund. Max will plan a research program in technological aspects of high-protein and other food supplies for deficient areas abroad. He will headquarter in New York City.

**William T. Brady,** president of Corn Products Co., New York City, has been honored with election as chairman of the board for the Foundation for American Agriculture. He succeeds **James A. McConnell,** senior consultant to GLF and former assistant secretary of agriculture.

An enterprising Wirthmore feed distributor, Cortland (N. Y.) County Feed, is supplying 4-H club members with rations for the 3,000 pheasants they received recently from the New York state game farm. Seventy youngsters are taking part in the feeding project. Each will receive $1 for every bird raised to seven weeks and then liberated.

Credit to the producers of coffee brands which include whole eggs is urged by **Samuel M. Golden,** president of the Amburgo Co., Philadelphia. Sam notes that Fireside coffee in the East is using substantial quantities of whole eggs in its products and has written the roaster to commend the product. In

the Midwest, North Woods is a popular brand of coffee with egg.

Some industry members who are close to the egg market are pictured here as they presented tickets for the second annual poultry coronation ban-

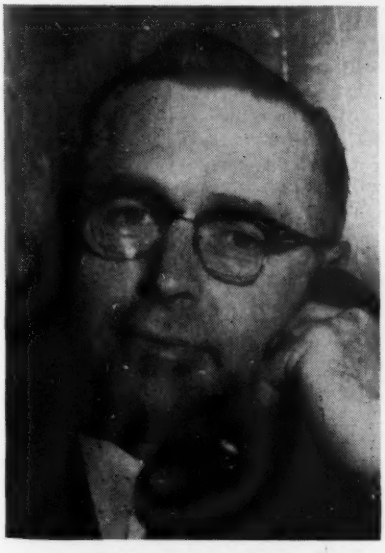
quet to Georgia Gov. **S. Ernest Vandiver,** center. The event is a highlight of the state's poultry products recognition week. At left is **Charles L. Davidson Jr.,** sales manager of Stone Mountain Grit Co., Lithonia, Ga., and at right is **Hulan Hall,** president of the Georgia Poultry federation.

We'll see many of you at the American Poultry & Hatchery federation meeting in St. Louis this month — thank heavens for air-conditioning!

## New Board of Directors At Productive Acres

New officers of the board of directors at Productive Acres Mfg. Co. have been announced by the Keota (Iowa) firm. They are:

H. S. Palmer, president; Cloyce Palmer,



PALMER OF PAMCO

first vice president; Dennis C. Palmer, second vice president; C. W. Smith, secretary; and Paul F. Wineman, treasurer.

*A new Blue Streak mixer was installed recently at West Fargo (N. D.) Feed Service.*

**NUTRENA APPOINTEE**

Appointment of Harold M. Seurer as products planning customer service specialist for its dog food division has been announced by Nutrena Mills, Inc., Minneapolis. Mr. Seurer was formerly a field representative for a Wisconsin feed company.

## Dr. Norris Retirement Announced by Cornell

Retirement of Dr. Leo Chandler Norris from Cornell University's poultry department and graduate school of nutrition has been announced by the school. The nutritionist will spend the next year in research at the University of California.

Dr. Norris' work in nutrition is widely known. Among his earlier contributions were the discovery of the importance of vitamin G in poultry nutrition, and the significance of manganese in preventing perosis.

He also helped determine the vitamin $B_{12}$ requirements of chickens. More recently, he identified vitamin K deficiency as the major cause of field hemorrhagic disease.

Currently, Dr. Norris is working on the mineral requirements of poultry. Along with others, he has shown a need for a certain amount of zinc in the diet of chicks, and aided in defining unidentified minerals more clearly.

The nutritionist has been at Cornell 39 years. He has also worked in human nutrition, and helped to establish Cornell's school of nutrition, of which he was secretary from 1941 to 1948.

## Fund Campaign for 4-H Is Begun in Feed Industry

A fund-raising program on behalf of the National 4-H Club Foundation has been launched in the feed industry. Greater participation is expected this year than last, when 139 feed firms contributed.

The foundation said that nearly 2¼ million young people are now enrolled in 4-H. A complete line of livestock projects from rabbits to purebred cattle is being undertaken by members.

The foundation recently opened its national center near Washington, D. C., with which it hopes to better serve its members. Also being undertaken is the International Farm Youth Exchange program, which operates between the United States and 50 other countries of the free world.

*Sanford's Feed Service, Wingo, Ky., recently was awarded a Big H four-way franchise.*

*Oregon (Wis.) Milling Co. recently installed a new Blue Streak mixer.*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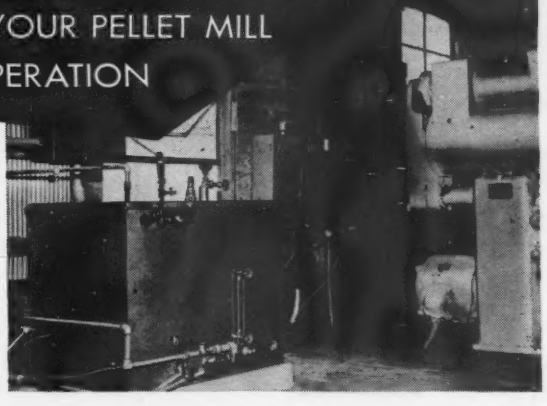

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**Economical electrode design gives 98% "dry" steam . . . power is used only when steam is being consumed. No coils, tubes or heating elements to clean, replace or burn out!**

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**MAGNAVITE** Regular and XXX fortifiers for poultry and hogs.

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*Grain and Feed Merchants*

**MILWAUKEE 2, WISCONSIN**


# Happy Birthday

Association-minded Ron Edstrom, who will light his natal cake candles an Aug. 23, sets a fast pace for this month's Happy Birthday parade. Mr. Edstrom is an executive of Glencoe Mills at Glencoe, Minn.

When Glencoe telephone number 665 is called, Assistant Manager Edstrom is usually the man with the ready answer and prompt service for his firm's many customers. Long active in the Northwest Retail Feed association, he has recently assisted in the organization of a similar trade organization serving Michigan's upper peninsula.

Here are the August birthdays:

AUGUST 1 — **Val J. Cismoski,** Val-A Co., Chicago; **Christy Humburg,** Christy Humburg Advertising Agency, Webster Groves, Mo.; **C. P. Messersmith,** Boca Raton, Fla.; **G. W. Winston,** Franke Grain Co., Milwaukee.

AUGUST 2 — **Cedric R. Bunten,** Nutrilite Products, Inc., Buena Park, Calif.; **J. H. Counce,** Chase Bag Co., New Orleans; **Paul R. Frohring,** General Biochemicals, Inc., Chagrin Falls, Ohio.

AUGUST 3 — **Jack Anderson,** DCA, Inc., Chicago; **John A. Caple,** A. B. Caple Co., Toledo; **E. H. Huibregtse,** Monticello Feed Mill, Monticello, Iowa; **J. W. Kruske,** Boston Feed Supply, Boston.

AUGUST 4 — **Lewis McClellan,** Cargill, Inc., Minneapolis; **Arthur B. Fruen,** Fruen Milling Co., Minneapolis; **E. L. McKee,** Ultra-Life Laboratories, Inc., East St. Louis, Ill.

AUGUST 5 — **Ray B. Bowden,** Texas Grain & Feed Association, Fort Worth, Tex.; **Dr. H. L. Wilcke,** Ralston Purina Co., St. Louis.

AUGUST 6 — **F. W. Huntington,** Ralston Purina Co., St. Louis; **George S. Schlegel,** Hillsboro Farmers Cooperative, Hillsboro, Wis.

AUGUST 7 — **W. D. Flemming,** Northwest Retail Feed Association, Minneapolis; **John M. Hagerty,** E. F. Drew & Co., Inc., New York City.

AUGUST 8 — **Robert C. Bacon,** Edward R. Bacon Grain Co., Boston; **Norman E. Clarke,** Hallet & Carey Co., Minneapolis; **Miss Jamie Fox,** National Renderers Association, Chicago.

AUGUST 11 — **Edward G. Ackerman,** Nopco Chemical Co., Newark, N. J.; **C. S. Sheldon,** Chase Bag Co., New York City; **Bruce Varney,** Agri-Tech, Inc., Kansas City.

AUGUST 13 — **Ralph E. Dower,** Wirthmore Mills, Toledo; **D. E. Huntington,** Spartan Grain & Mill Co., Inc., Spartanburg, S. C.; **Elmer Wilburth,** Milwaukee.

AUGUST 14 — **E. C. Kessler,** Ames-Burns Co., Jamestown, N. Y.; **E. F. Morris,** Morris-McAdams Co., Minneapolis.

RON EDSTROM

AUGUST 15 — **Bill Karr,** Karr & Co., Columbus; **H. I. Rode,** Waupaca, Wis.

AUGUST 16 — **Vernon Dawe,** Dawe's Laboratories, Inc., Chicago.

AUGUST 17 — **T. A. Conway,** Publicker Industries, Philadelphia; **George R. Coontz,** Wilson & Co., Inc., Cedar Rapids, Iowa; **Norman F. Hoglund,** Warner Brokerage Co., Minneapolis; **E. R. Humphrey,** E. R. Humphrey Grain Co., Enid, Okla.; **E. H. Russell,** Minnesota Linseed Oil Co., Minneapolis.

AUGUST 18 — **R. G. Leavitt,** Ralston Purina Co., St. Louis; **G. L. Van Lanen,** Hubbard Milling Co., Mankato, Minn.

AUGUST 19 — **Ezra Levin,** VioBin Corp., Monticello, Ill.

AUGUST 20 — **A. C. Buckle,** Corn Products Co., Chicago; **Robert G. Everett,** Robinson Price Agency, Chicago; **W. E. Glennon,** American Feed Manufacturers Association, Chicago; **W. B. Griem,** State Department of Agriculture, Madison, Wis.; **J. M. Rice,** Gland-O-Lac Co., Omaha.

AUGUST 21 — **J. D. Cramer,** Chase Bag Co., Gashen, Ind.; **J. Russell Ward,** Wilson & Co., Inc., Chicago.

AUGUST 22 — **J. P. D. Fritz,** General Mills, Inc., Los Angeles.

AUGUST 23 — **Ron Edstrom,** Glencoe Mills, Glencoe, Minn.

AUGUST 24 — **Richard R. Glowe,** DCA, Inc., Chicago; **Leo J. Warren,** Murphy Products Co., Burlington, Wis.; **J. P. Wildar,** Chase Bag Co., Kansas City.

AUGUST 25 — **Charles R. Decker Jr.,** Decker Mfg. Co., Keokuk, Iowa; **J. B. Trigg,** Chase Bag Co., Buffalo.

AUGUST 26 — **Dr. R. J. Kunz,** Borden Co., New York City.

AUGUST 27 — **Harry Dean,** W. & J. Miller, Iowa City, Iowa; **Albert H. Lois** A. H. Lois Feed Co., Bassett, Wis.; **Don**

**d W. Ryan,** Excelsior Milling Co., Minneapolis.

AUGUST 28 — **Rudy Dennis,** A. E. Staley Mfg. Co., Decatur, Ill.; **Edwin Leet, Fuller & Smith & Ross, Inc.,** Cleveland.

AUGUST 29 — **Roger A. Fruen,** Fruen Milling Co., Minneapolis; **Casey Jones,** Clifton, Ill.; **Ward H. Olmsted,** Olmsted-Foley Co., Inc., Minneapolis.

AUGUST 30 — **Mike Karr,** Karr & Co., Columbus; **Edmund Pincoffs,** Shellbuilder Co., Houston; **Bob White,** Bob White & Co., Des Plaines, Ill.

## Debeaking Is Reviewed By Maine Researchers

Debeaking chicks at 10 days of age results in better feed conversion than when the birds are debeaked at one day of age, according to poultry scientists at the University of Maine agricultural experiment station.

Removing more than one-third of the upper beak causes poor growth rate and feed conversion. Non-debeaked birds weigh more when marketed but tend to show a poorer carcass grade, and have a higher mortality rate.

Searing the tip of the bottom beak, in addition to removing one-third of the upper beak at 10 days of age, was found to give the best feed efficiency but the smallest body weight of any of the treatments.

## Increase Continues in Carolina Feed Output

Total Tarheel state feed tonnage for the first 10 months of this fiscal year was 1,300,154, according to figures released by the North Carolina department of agriculture. This compares with 1,117,076 for the same period the year previous.

Best of the 10 months was October, 1958, when 141,366 tons were produced. Low month was February, 1959, which registered a total of 112,723.

Total tonnage for the fiscal year 1957-58 was 1,370,315. The yearly figure has shown a rise since 1952-53, when 1,043,434 tons were produced.

## Minnesota Hog Marketing Pattern Makes Shift

Changes in farrowing and marketing patterns have led to less month-to-month variation and more stable income for Minnesota's hog producers, according to marketing specialists at the University of Minnesota.

Among the changes are fewer farrowings in spring and more in summer and fall; a shift within the spring farrowing period itself, with less in April and May; earlier slaughter market peaks; fewer marketings during the peak; heavier marketing in summer; and earlier and less severe seasonal price declines.

The specialists said that, despite the improvement, more can be done to level out the monthly hog marketings. They said the state is following a national trend toward taking some of the peaks and valleys out of the business.

**for year 'round**
**sales and profits . . . it pays to sell the**

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- **NATIONAL MILK REPLACER**
- **NATIONAL NO-MILK CALF FOOD**
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- **NATIONAL DOG FOOD**

Dealers who handle the National line know National products are unsurpassed for quality and dependable performance. A few dealers have sold National for over 40 years; some for over 30 years; many from 10 to 30 years. Backed by a strong, preselling advertising program, National has paid off for them as it will for you!

***There's no obligation to learn about National's profit-making dealer program. Write or wire today!***

NATIONAL FOOD COMPANY
*since 1885*
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Laying feed sales are becoming less and less seasonal. Hundreds of our dealers report that Shellbuilder sales during June, July and August are better than ever. Buy Shellbuilder now for extra profit. Don't run out. Be ready for those early fall sales, too.

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# Current Reading

## Reviewed by The Feed Bag Staff

**Annual Report — 1958,** School of Agriculture, North Carolina State College, Raleigh, free.

Here is a 34-page annual report of the North Carolina State school of agriculture. The publication discusses a new concept of agriculture, resident instruction, experiment stations, and the agricultural extension service.

Feed men will want to scan the listing of experiment station staff publications for 1958, many of which they will be able to apply to their own operations.

* * *

**Alfalfa Hay and Dehydrated Alfalfa Meal in Milo and Sorghum Rations for Fattening Steer Calves,** by L. S. Pope, Robert MacVicar, Lowell Walters, and V. G. Heller, Oklahoma Experiment Station, Stillwater, free.

This 16-page bulletin from the Oklahoma station reports a study with fattening steer calves undertaken to test the value of varying amounts of alfalfa hay or dehydrated alfalfa meal, as well as the carotene or minerals contained in small amounts of alfalfa, on gains, feed efficiency, and carcass merit. The feeding tests were conducted for 165 days (late October to mid-April).

Four trials were conducted in which alfalfa hay or dehydrated alfalfa meal pellets replaced one-fourth or one-half of the cottonseed meal on an equal-protein basis in fattening rations. Results of each trial are tabulated and discussed.

* * *

**Time Required for Dairy Cows to Eat Concentrates and Silage,** by O. T. Stallcup, D. V. Bostain, and K. P. Bierworth, Arkansas Experiment Station, Fayetteville, free.

Dairy cows eat grain faster in milking parlors than in stanchion barns, according to this 16-page report from the Arkansas station. The study reported was conducted to determine the concentrate consumption rates of 400 dairy cattle.

The study indicated that farm management has considerable influence on amount of concentrate fed, time cows require to eat concentrates, and their consumption rate. Application of these data to milking parlor design and the need for individual attention in the feeding of cows is discussed in the bulletin.

* * *

**Testing Bulls for Fertility,** by L. A. Maddox Jr., R. O. Berry, A. M. Sorensen, and U. D. Thompson, Texas Experiment Station, College Station, free.

How much of a problem is the infertile bull in beef herds today? According to this eight-page bulletin from the Lone Star station, seven per cent of the bulls in Texas are infertile.

The purpose of the bulletin is to report simplified methods of determining fertility and some background studies on the numbers and ages of infertile bulls.

* * *

**Annual Report—1958,** Chicago Board of Trade.

The 1958 annual report of the Chicago Board of Trade is presented in a 176-page hard-cover book. The 1958 report is the 101st to be made by the exchange.

The contents include the officers, directors, various committees, and others serving the exchange. Detailed statistics cover the trade crops and livestock during the year. Daily current prices are presented.

* * *

**Arkansas Meat Performance Broiler Test No. 14, Winter, 1958,** by T. D. Hobbs, David Andrews, N. R. Gyles, R. M. Smith, and L. T. Lankford, Arkansas Experiment Station, Fayetteville, free.

This eight-page folder from the Arkansas station reports a broiler meat performance study conducted by the station and sponsored by the Arkansas Poultry Improvement association. It describes the performance of strains and strain-crosses under stated circumstances.

The test was started Oct. 21, 1958, and completed Dec. 16, 1958. Feed men will be interested in the diet used as well as the performance of the broiler strains tested.

* * *

**Carotene Requirements of Dairy Cattle,** by Magnar Ronning, Willis D. Gallup, E. R. Berousek, and Jack L. Griffith, Oklahoma Experiment Station, Stillwater, free.

This 32-page Oklahoma bulletin summarizes research conducted over a 20-year period relative to carotene requirements of Jersey, Guernsey, and Holstein cattle. Prairie hay was fed as the primary source of carotene, with a minimum use of carotene supplements as needed.

Cottonseed meal, hominy feed, beet pulp, and cottonseed hulls were used to balance the rations with respect to digestible protein, total digestible nutrients, and fiber. Feed men will be interested in the text and tabular material reflecting the carotene intake level for normal lactation and successful reproduction.

* * *

**Importance of Size and Proper Development in Respect to Breeding Performance of Rambouillet Ewes,** by Maurice Shelton, Texas Experiment Station, College Station, free.

Here is a six-page mimeographed progress report from the Texas station. The report presents the results of a study conducted to determine the normal or optimum size and rate of development for the type of sheep being bred in order to gauge management and selection programs. This study concerns the Rambouillet breed.

Size or weight of yearling ewes when they enter the breeding flock was found to have a major influence on subsequent breeding performance. Ewes weighing 100 to 115 pounds performed better than those weighing above or below, according to the report.

* * *

**Potential Effects of St. Lawrence Seaway on Costs of Transporting Grain,** Superintendent of Documents, Government Printing Office, Washington 25, D. C., 75 cents.

Here is a comprehensive 152-page report on a study by the Agricultural Marketing service to compare the charges to shippers and the costs to transportation agencies for transporting grain from selected areas of production to domestic and foreign markets, via the St. Lawrence seaway and other routings.

Parts or all of 17 states fall in the area tributary to the Great Lakes — St. Lawrence waterway. These states account for over 75 per cent of the total yearly output of grain. More than half of the publication is devoted to tables comparing transportation costs for various grains.

***Storage capacity at Turner Grain Co., Ravenna, Neb., is being increased. Some 110,000 bushels of space will be added by facilities now under construction.***

# NOW...THE BIGGEST AND LOWEST

# *new Butler*

**Giants in size** — When we say Butler Giant Bins are the biggest . . . we mean BIGGEST. The largest Giant Bin isn't 24 feet . . . isn't 27 feet, but a giant 36 feet in diameter. And, it stands 40 feet high at the eave.

As for capacity! This Giant Bin holds over 36,000 bushels (see table below). That's twice the volume of other so-called big bins.

**Giants in economy** — Most important of all, Butler Giant Bins give you weathertight, firesafe storage at a cost per bushel no other individual storage bin can match. Easy to fumigate . . . easy to aerate . . . easy to clean and maintain . . . Butler Giant Bins cost less to operate too, easily equipped with automatic handling equipment.

**Giants in utility** — Butler Giant Bins make it easy to segregate, condition and store different types and grades of grain. Available in 11 sizes . . . there's a Butler Giant Bin to fit most any land or volume problem you might have. And, thanks to bolt-together construction, Butler Giant Bins can be relocated easily to meet changing storage needs.

If you need emergency or annex storage . . . get the full story on Butler Giant Bins before you invest a single dollar. For full details, contact your nearby Butler Dealer, Builder or Contractor. Or, write directly to us.

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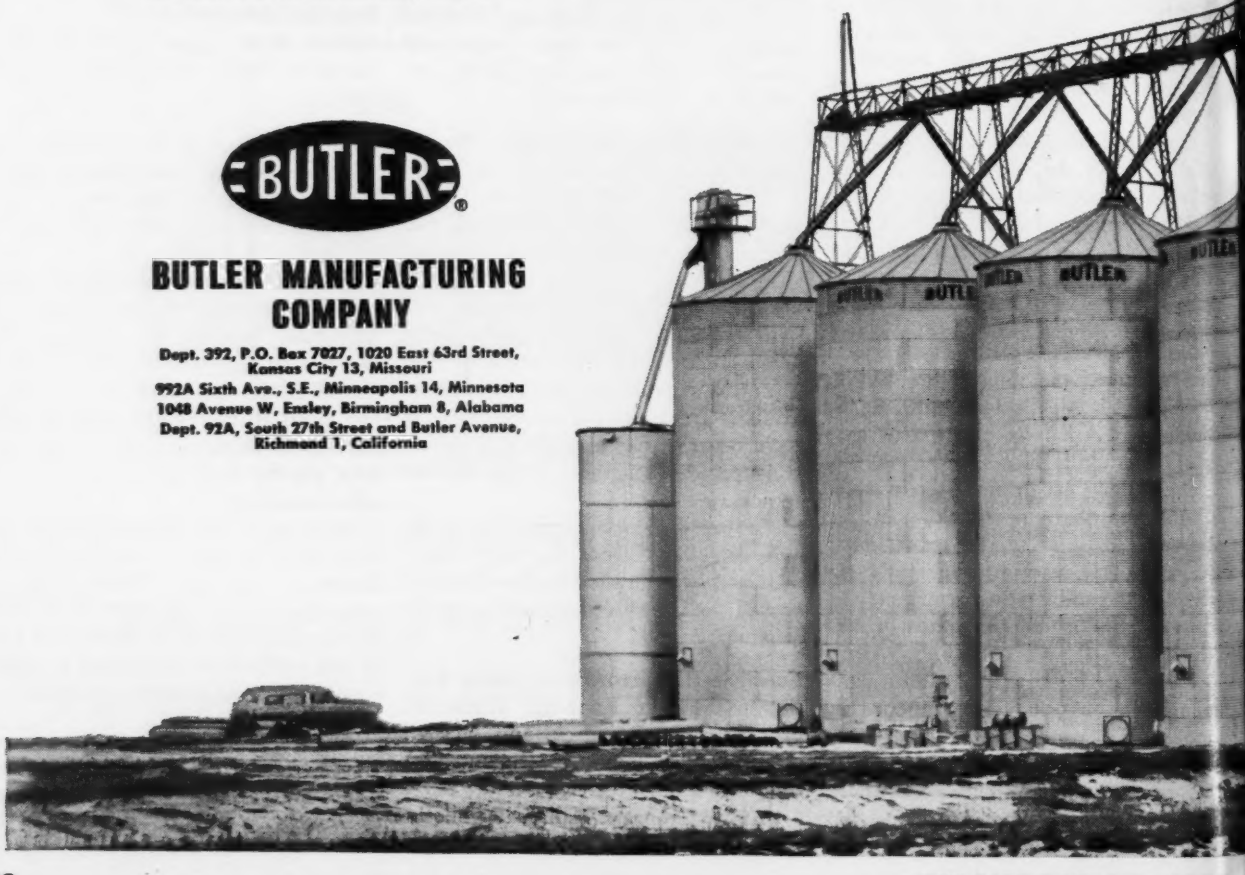
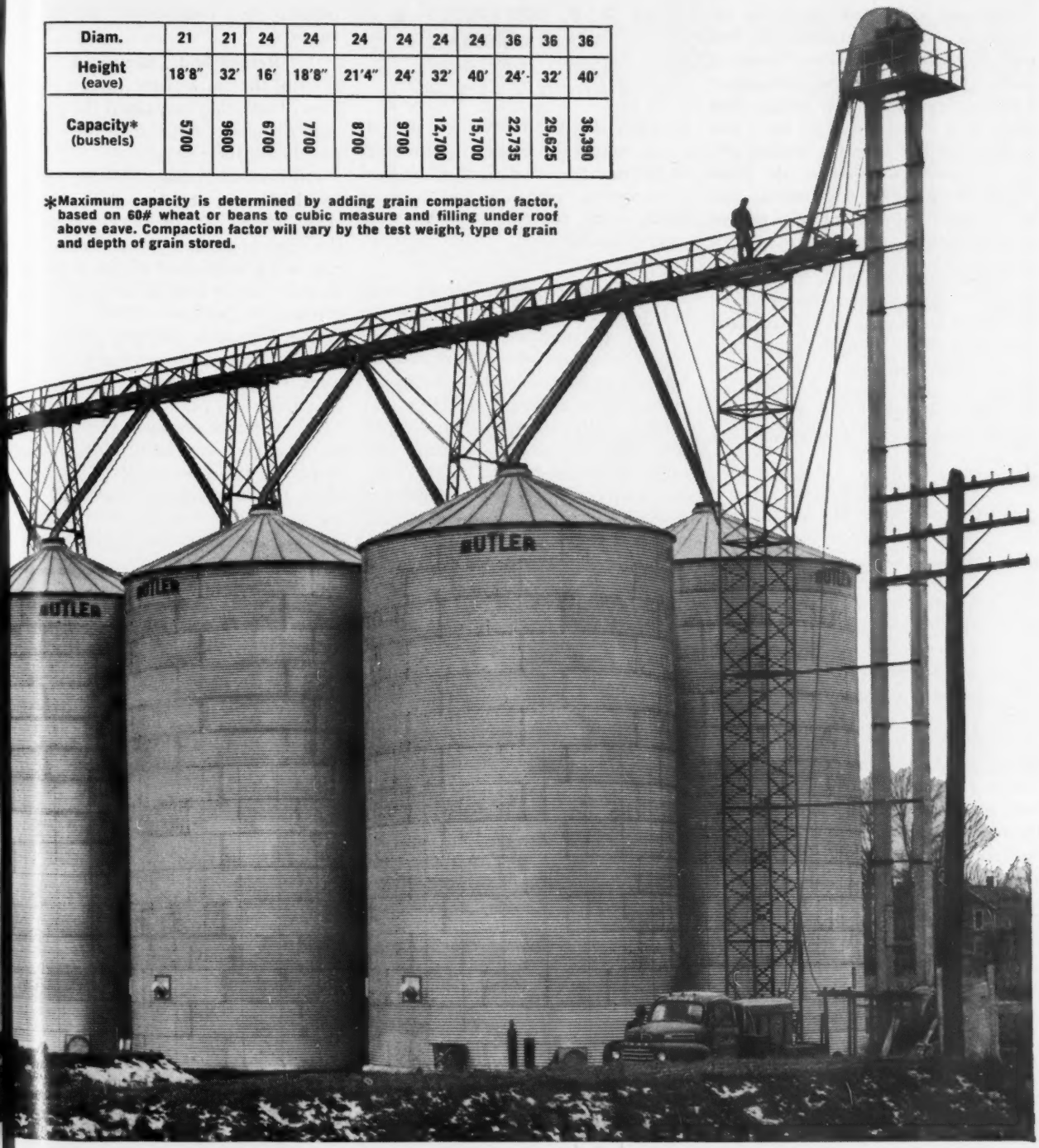


# COST PER BUSHEL GRAIN BINS YOU CAN BUY

# *GIANT bins*

| Diam. | 21 | 21 | 24 | 24 | 24 | 24 | 24 | 24 | 36 | 36 | 36 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Height (eave) | 18'8" | 32' | 16' | 18'8" | 21'4" | 24' | 32' | 40' | 24' | 32' | 40' |
| Capacity* (bushels) | 5700 | 9600 | 6700 | 7700 | 8700 | 9700 | 12,700 | 15,700 | 22,735 | 29,625 | 36,390 |

*Maximum capacity is determined by adding grain compaction factor, based on 60# wheat or beans to cubic measure and filling under roof above eave. Compaction factor will vary by the test weight, type of grain and depth of grain stored.



# Pelleting Rations Makes For Better Conversion in Production of Broilers

By R. P. MITCHELL & O. E. GOFF
*Poultry Department*
*University of Tennessee*

**Pelleting of poultry feeds has become an accepted practice of feed manufacturers. Poultrymen favoring pellets list some of the advantages: Chickens can eat more pellets than mash in a short period of time; less feed will be lost from the feeders; pellets accidently dropped in the litter can be recovered by the chickens; pellets increase the rate of growth and feed efficiency.**

Poultrymen favoring mash state: Pellets cost more per 100 pounds; chickens consume mash easier; feed wastage from the troughs can be controlled by limiting the amount of feed placed in the hoppers; considering feed cost and broiler produced per pound of feed, the performance favors the mash.

### Objectives of Research

Published reports fail to provide conclusive evidence regarding the merits of pellets versus mash. Therefore, a study was undertaken to compare mash versus pellets for broilers; to compare high versus low-energy feeds for broilers at two protein levels; and to determine the economics of broiler production when fed a mash or a pelleted diet.

A total of 1,800 broiler-type chicks were obtained from a commercial hatchery. At one day of age the chicks were sexed, de-beaked, and vaccinated for infectious bronchitis and Newcastle diseases. The intraocular method of vaccination was used. Chicks classed as males by the sexer were toe-clipped for identification. Male and female chicks — 50 of each — were assigned at random to each of the 18 pens. Six experimental treatments and three replicates of each treatment were used.

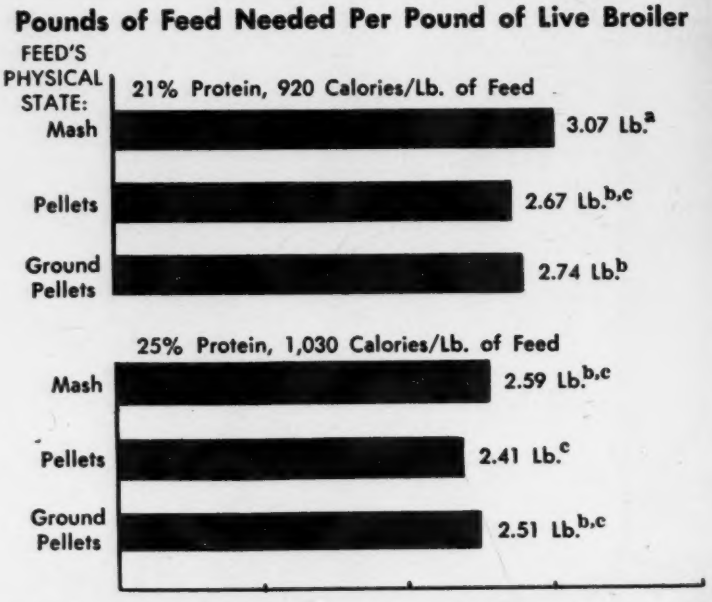
Each pen measured 10 by 15 feet. Litter was wood shavings. One four-foot water trough and three four-foot feed troughs were placed in each pen. Infrared heat lamps were used for brooding. Feed and water was provided ad libitum through the entire nine-week growing period. Records on feed consumption, mortality, and cause of death were collected. Chicks were weighed individually at nine weeks of age.

Two diets were used: One feed contained 21 per cent protein with 920 calories of productive energy per pound, while the second contained 25 per cent protein and 1,030 calories per pound. In each case, one ration was fed as a mash, a second was fed as pellets, while the third was made into pellets and then ground to the same consistency as the original all-mash diet. The pellets were one-eighth-inch in diameter. All diets were mixed and pelleted by a commercial feed manufacturer.

### Results and Discussions

Until the chicks were three to four days of age, they consumed the pellets with difficulty. After that, the chicks readily ate the pellets.

All pens of chicks receiving pellets weighed more at four weeks of age than did the lots of chicks receiving the mash or ground pellets. When the nine-week weights of chicks were analyzed — using analysis of variance according to Snedecor (1956) and applying Duncan's multiple range test (1955) — it was found that the nine-week weights of chicks fed the diet containing 25 per cent protein and 1,030 calories of productive energy per pound of feed were significantly greater (at the five per cent level of probability) than weights of chicks receiving the 21 per cent protein diet. The weights of chicks receiving pellets




**Weights of broilers bearing the same subscript — a, b, or c — are not different one from the other.**

# TAKE NO CHANCES WITH FIRE

**Before** WELDING. Get written permit. Shut down machinery. Clean up dust. Clear out burnables. Wet down floor.

**During** WELDING. Post watchmen—with extinguishers — in all directions.

**After** WELDING. Keep a patrolman. Beware smouldering fire.

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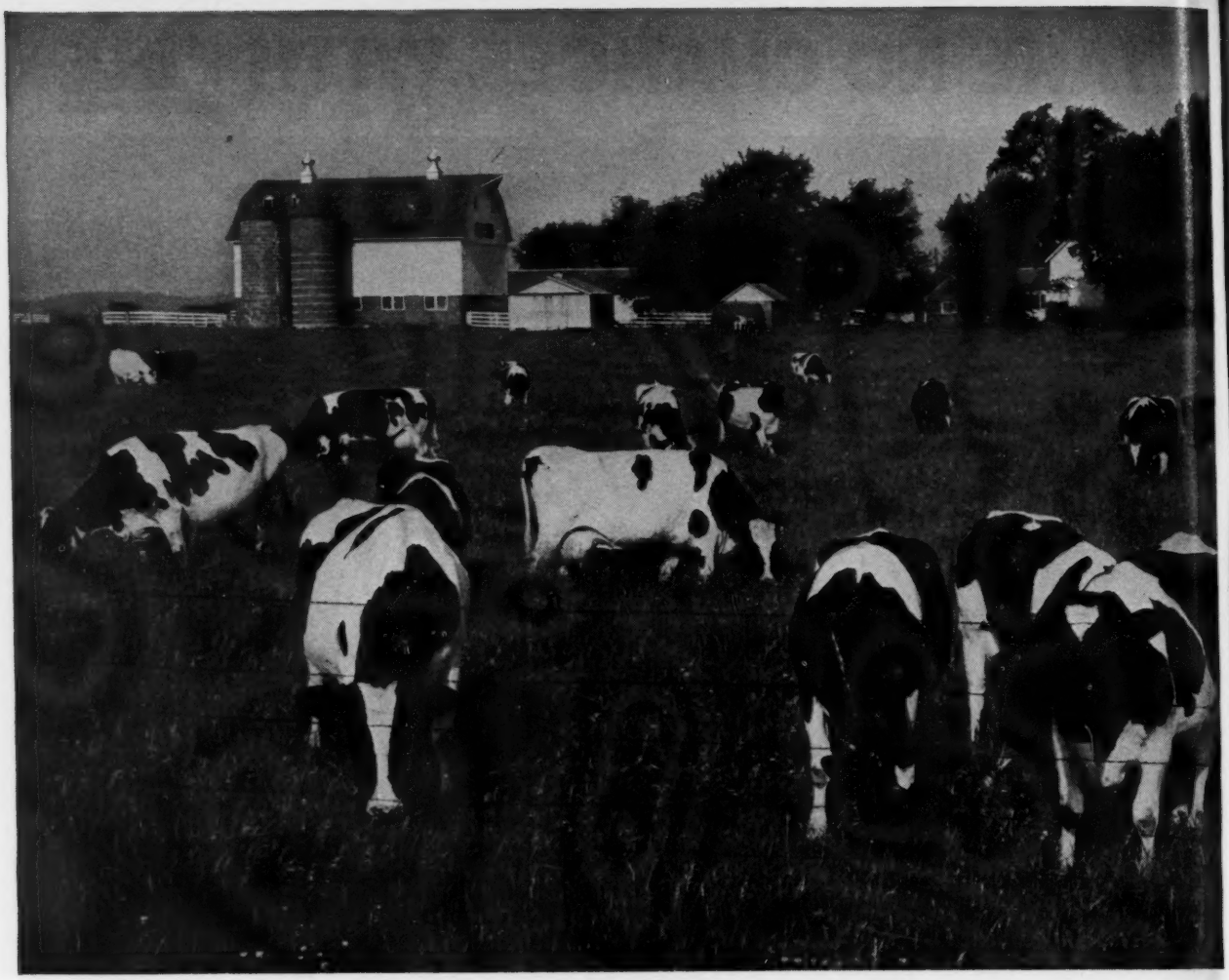

*Helping you increase volume by telling your customers:*

# "Why it pays to supplement pasture with good formula dairy feeds"

Throughout the summer, Cyanamid advertising to dairymen will carry a story similar to that being told by many feed manufacturers in their own advertising.

In effect, that story is: "Get the *most* out of your summer feeding! Pasture alone can't give your cows all the food values they need for sustained high production. When you feed grain or roughage, provide also a balanced formula feed.

"When you're feeding cows bred to be high producers, the need for extra proteins, minerals, vitamins and an effective antibiotic in the ration is highly important. This is particularly true in late summer when pasture may be close-cropped and dry.

"Formula feeds keep cows in better health, help maintain good flesh, help prevent summer slumps. Cows that have freshened in the spring reach peak production quickly and sustain it. Cows that will freshen in the fall taper off more slowly and remain in better weight and condition to produce strong, healthy calves.

"AUREOMYCIN® in formula feeds helps reduce invisible, sub-clinical diseases that slow down milk flow. It is effective against respiratory infections and foot rot that may result from stress conditions."

As you urge your customers to make it a regular practice to give cows a balanced formula feed the year round – recommend also the use of AUREOMYCIN for better health protection. Incorporate AUREOMYCIN! American Cyanamid Company, Agricultural Division, New York 20, New York.

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IN FORMULA FEEDS

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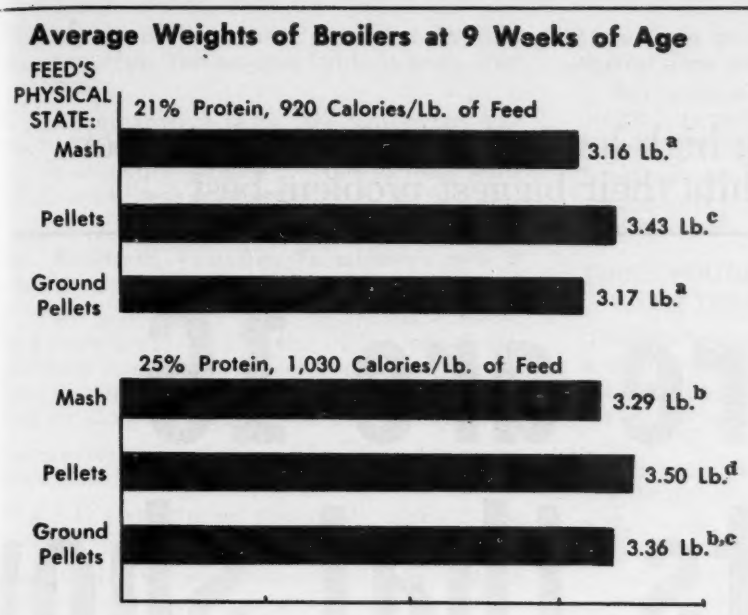


**Weights of broilers bearing the same subscript — a, b, or c — are not different one from the other.**

were significantly greater than those fed mash. The effects of the high-protein and high-energy diet and pelleting were additive. The chicks fed the pelleted, high-protein, high-energy diet were significantly heavier at nine weeks of age than were the chicks receiving any of the other treatments.

The diet containing 21 per cent protein and fed as an all-mash or as ground pellets was significantly inferior to the other treatments when measured in terms of nine-week broiler weight. The broilers fed ground pellets as a mash failed to produce gains equal to the broilers fed the same diet as pellets.

Significant differences between the growth rate of chicks fed the all-mash and those fed the ground pellets were not found. There was a highly significant difference in the growth response of chicks receiving pellets and those receiving ground pellets in favor of the chicks receiving the pellets.

The feed efficiency of the all-mash diet containing 21 per cent protein was significantly inferior to all other treatments when measured in pounds of feed per pound of live broiler weight. The pelleted diet containing 25 per cent protein and high in energy was significantly superior to the 21 per cent protein diet fed — either as all-mash or as ground pellets — when measured in pounds of feed required to produce a pound of live broiler.

When feed consumption, feed price, and market value of broilers produced were used as criteria and converted to income over feed cost, the economic returns favored the high-energy, high-protein diet fed in pellet form. The income over feed costs per 1,000 broilers sold was greatest for those lots fed pelleted feed and least for those lots fed an all-mash diet. On the basis of these data it paid to use pellets, although the price per 100 pounds was greater than the price of mash. Income over feed costs was increased even more when the high-protein, high-calorie diet was fed.

**Returns Per 1,000 Broilers Produced**

| Treatment | Protein | Feed Consumed | Feed Price Cwt. | Value of Feed Consumed | Chickens Sold | Market Value* | Income Over Feed Costs |
|---|---|---|---|---|---|---|---|
| | % | Lb. | $ | $ | Lb. | $ | $ |
| Mash | 21 | 9675 | 4.23 | 409 | 3160 | 632 | 223 |
| Pellets | 21 | 9241 | 4.31 | 398 | 3430 | 686 | 288 |
| Ground Pellets | 21 | 8651 | 4.31 | 373 | 3170 | 634 | 261 |
| Mash | 25 | 8524 | 4.61 | 393 | 3290 | 658 | 265 |
| Pellets | 25 | 8426 | 4.78 | 403 | 3500 | 700 | 297 |
| Ground Pellets | 25 | 8441 | 4.78 | 403 | 3360 | 672 | 269 |

* Broiler price 20¢ per lb.

### Summary

**1) Diets containing 21 per cent protein with 920 calories of productive energy per pound and 25 per cent protein with 1,030 calories per pound of feed were fed to broiler-type chicks from one day of age until marketed at nine weeks of age.**

**2) Chicks fed the pelleted, high-protein, high-energy diet were significantly larger at nine weeks of age and gave a greater return over feed cost than did any of the other treatments.**

**3) Pelleting of the diets improved the growth rate and feed efficiency of broilers.**

**4) Grinding of a pelleted broiler diet failed to significantly improve growth rate or feed utilization of broilers over the non-pelleted diet.**

**TOCCOA REPRESENTATIVE**

Appointment of Earl Payne as eastern North Carolina representative has been announced by Toccoa (Ga.) Metal Products & Implement Co. Mr. Payne has a long background in the poultry & hatchery business, and has been traveling in various states for Toccoa for the past year.

## Vote PENB Continuation Of Broiler Promotion

**Broilers will continue to be promoted by the Poultry & Egg National board in direct proportion to investments received, it has been announced by Ralph J. Thomas, PENB president.**

**Directors of the board voted two-to-one at a recent meeting to retain the policy. The balloting had resulted from a motion that was passed in April to cease broiler solicitation and promotion.**

**Arrangements have been made for a meeting between PENB and egg industry leaders at St. Louis in July. A plan to strengthen the egg voice in the poultry industry will be discussed at the session.**

***Now handling the complete Honeggers' line is De Vesser Feed, Holland, Mich.***

When selling high-level poultry feeds, remember:
Terramycin hits their biggest problem best

# Here are 16 reports that show Terramycin® hits CRD organisms better than any other drug ...BAR NONE!

Brand of Oxytetracycline

CRD is the broiler grower's number one disease problem. Terramycin fights it best. For 5 reasons:

1. In comparative tests (see summaries below)—in actual serological (blood) analyses . . . in test-tube studies . . . and in tests with CRD organisms in eggs:

**Terramycin rated above Aureomycin, Streptomycin, Bacitracin, Penicillin, Furazolidone and 9 other drugs**

2. Two general types of organisms cause—and complicate—CRD: the PPLO, which apparently initiate the disease; and other organisms (gram-negative types) which complicate and increase the severity of the condition:

**Terramycin fights both—while other drugs can miss either one or both**

3. CRD occurs most commonly under stress conditions:

**Terramycin's known anti-stress action fights stress setbacks and saves more birds**

4. CRD flare-ups frequently occur after vaccination for Infectious Bronchitis and Newcastle:

**Terramycin gives birds unbeatable protection against these outbreaks**

5. Studies in *natural* outbreaks in commercial flocks (the real proof of any drug's effectiveness for broiler producers) show:

**Terramycin hits CRD best**

Remember, there is no substitute for good management . . . or Terramycin.

## TIMES YOU CAN SELL HIGH-LEVEL FEEDS WITH TERRAMYCIN TO FIGHT CRD

**Use Terramycin at the level of 200 grams per ton:**

- from 0-5 days of age to decrease early chick mortality . . . and produce healthier, more stress-resistant birds, better able to fight off CRD.
- 4th week. Use for 5 days following second vaccination.
- 7th week. Another critical period. Use Terramycin to help prevent CRD outbreaks and protect investments during this period when birds are close to market.
- in cases of actual outbreaks of this disease.
- at times of stress such as handling, weather changes, vaccination, etc.

## HERE ARE THE SUMMARIES OF THE 16 TESTS

**Test #1** Terramycin and Magnamycin rated as best of 12 drugs—Terramycin was 10 times as effective as Aureomycin in this *in vitro* test.

**Test #2** Terramycin surpassed Aureomycin, streptomycin, and hygromycin in effectiveness against PPLO in embryo-protection tests.

**Test #3** Terramycin rated superior to Aureomycin in a 10-week high-level feed trial with CRD-infected chicks. The test showed blood factors indicating an infection with the Aureomycin chicks from the 3rd week on. None were found with the Terramycin chicks.

**Test #4** Against 5 strains of CRD-sinusitis organisms, Terramycin rated first—3 times as effective as streptomycin, 5 times as effective as Aureomycin and over 50 times as effective as neomycin.

**Test #5** Terramycin was rated from 4 to 8 times as effective as Aureomycin in these *in vitro* tests of minimal inhibitory concentrations of antibiotics against 6 strains of PPLO.

**Test #6** In a test of antibiotic control of secondary invaders in CRD, Terramycin was effective at 100 gm. and 500 gm. per ton levels. Penicillin was not effective at these levels.

**Test #7** Terramycin was most effective, Aureomycin second, bacitracin third and furazolidone fourth when these four drugs were compared in birds infected with CRD.

**Test #8** Field infection. High-level Terramycin and Aureomycin surpassed penicillin. Terramycin generally somewhat better than Aureomycin.

**Test #9** Both Terramycin and Aureomycin increased growth rate of birds affected by CRD by more than 10% over untreated.

**Test #10** A field trial with 36,000-bird flock affected by CRD. Terramycin cut deaths by more than half; produced birds weighing 0.59 lb. more at market time; increased return per 100 birds by $58.87.

**Test #11** Aureomycin and Terramycin in water were equally effective in removing PPLO organisms from the trachea of infected birds.

**Test #12** Terramycin and Aureomycin were found most effective in combating egg transmission of CRD, followed by tetracycline, erythromycin and streptomycin.

**Test #13** Terramycin and penicillin were compared for effectiveness in suppressing secondary infections associated with CRD. Terramycin was effective. Penicillin was not.

**Test #14** A test with 3 antibiotics against PPLO. Terramycin was approximately 5 times as effective as Aureomycin. Streptomycin was not effective.

**Test #15** 16 antibiotics were tested against PPLO. Terramycin and Magnamycin were best. At the lowest levels of antibiotics used in the test, mortality for the controls and Aureomycin were 100%; Terramycin, 20%.

**Test #16** Terramycin and tetracycline rated best when 8 strains of PPLO were checked *in vitro* against 6 antibiotics. In an *in ovo* test comparing Terramycin and Aureomycin, Terramycin was best. And in two comparisons between Terramycin, streptomycin and dihydrostreptomycin, Terramycin was best.

# High-Level Feeds with potent Terramycin®

Brand of Oxytetracycline

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*Science for the world's well-being*
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Pfizer

*There is no substitute for good management . . . or Terramycin*

# Some Sound Advice on How to Find Solutions for Really Vexing Problems

**Problems cannot be solved by sidestepping or by delaying tactics, Business Counselor Burke emphasizes in this column. He analyzes what can be lost by such evasion and also how problems can be lessened in many cases by early solution.**

By GERALD BURKE
*Our Business Consultant*

Mr. Average Businessman's most common complaint is — "People don't understand my problem."

No truer words were ever spoken.

But let's analyze why we are so misunderstood.

A few months back a gentleman walked into our office. He had been a very successful manager for a chain of self-service variety and department stores. He came into this area and opened up a new store which met with immediate success. The man had tremendous ability, a pleasing personality, and unlimited drive. He seemed capable of handling any situation, yet —

His employer had made certain glowing promises which were soon forgotten when it came time to sign a new contract. This man became thoroughly disgusted and walked out.

After trying unsuccessfully to get a similar position in this area, he decided he'd like to go into this business for himself. Unfortunately, he had no capital.

He sought us out (and like the man who was willing to do anything) we found his plans were disorganized. After a little questioning he told us how difficult it was to get organized and why certain ideas we suggested could not work. He was very discouraged, confused, and undecided, and it was almost impossible to determine what he wanted to do.

How could we understand when his thinking was so muddled?

At this point we were strongly tempted to encourage him to forget the whole idea and try to get a job, but we knew the man had ability. He had demonstrated it.

Just what was wrong?

Like a bolt out of the blue it came to us. It seemed so elementary it was almost absurd. Here was a man who normally never entertained a negative thought now actually selling not only himself but his audience too on the idea his proposition had very little chance for success.

"Why do you want to interest others in a plan you know cannot succeed?" we asked.

These were fighting words and he proceeded to tell us why he could make a go of it.

### Be Positive

We pointed out the only way his plan could hope to succeed was for him to dismiss all thoughts of failure. He saw the plan could be sold if he believed in its success and could generate enough enthusiasm so others would also believe it.

With this enthusiasm he made new contacts and in a few days time was able to raise the capital he needed to get his venture off to a successful start.

This simply illustrates that we must have a clear picture in our minds what we are trying to put across or we will only plant confusion in the minds of others.

Another client of ours, president of a growing business, had big plans for the future. He needed a new manufacturing plant and a new salesroom. He needed more working capital to develop new products he knew could be sold and he felt additional working capital could be used wisely in opening new territories. For about three years the matter was discussed wistfully with his board of directors, who were sympathetic but apathetic. Apparently the president was waiting for the board to act and the board was waiting for the president. When no one moves, there is inactivity.

### Growth Chart

We felt so strongly about the growth possibilities that we suggested the president allow us to make a comparative five-year statement of operations and net worth. In this statement we brought out clearly the potential that was lying dormant.

We proposed:

Additional stock be sold first to the present stockholders; next to a group of preferred customers who were aware of the merits of the products manufactured and sold.

We set up a specific amount of additional capital that we felt would be needed to —

1) Purchase a new plant and sales office.

2) Set up a research and development project on new products and

3) Set the machinery up for expansion of territory.

### How It Worked

In less than a year's time, all of this was accomplished only because the

president's thinking was conveyed clearly to the board of directors. His faith in his plan and his enthusiasm caught on and the board of directors were rewarded last year by having the best year in the history of the company sales and profit wise.

Another interesting story of how clear thinking pays off was demonstrated very recently during a campaign to raise funds for a community charity. The drive got under way later than usual. Pledge cards were distributed during a hot spell. Some of the busiest men in the community were asked to solicit funds and there was some grumbling because many indifferent people would make no effort either to give or to work. On one of the hottest nights of the week one of the workers went out. He had so many other things to do he felt he couldn't postpone this chore any longer or it wouldn't be done at all.

Now, you and I know when a person comes home after a hard day's work he wants to relax and he doesn't want to be annoyed with problems.

This busy solicitor was tired and he was strongly tempted to take his evening paper, sit in a cool place, and just relax. No one would have criticized him if he had, but he had set up a time table for this chore and it was that night or never.

**Selling Plan**

He planned his route, worked out a 60-second sales pitch, and he was off. He found every one of his people at home resting. He went into his abbreviated talk and handed each prospect a pen and wound up by getting a pledge from every single person he called on, collected some cash, and was able to report an increase over the pledges secured from the very same people the year before.

Yes, things can be done if people know clearly what they want to accomplish. We all have a habit of kidding ourselves at times. When we do not want to do a job, we'll select a reason why it can't or should not be done and no matter how flimsy it is, it salves our conscience. If we are determined a job must be done, we'll take every obstacle in its stride and stay with it until we have accomplished what we set out to do.

Sometimes we are not sure whether or not we want to do a certain thing. We postpone making a decision hoping something will happen one way or another so a choice can be made. We actually believe, in many cases, the longer we wait the easier it will be to make the right decision. We want to wait until all the facts are crystal clear and there is not a single element


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of doubt in our minds.

Unfortunately, that day never comes because we never have all the facts. Each day we wait we learn something new pro or con that has a definite bearing on our final decision. It is because of this many of us wait and wait and wait.

The fear of making a wrong decision leads to total inactivity. The worry most of us take on is simply the result of the conflict that goes on within us when we are trying to make a decision.

Hard work never killed anyone; it is usually worry or indecision which kills.

### Way Out

The only way we can remove the cause is to set a time table on all problems we face. Gather all the facts until the time of decision is at hand. Then, armed with this information, make a decision. You will accomplish more things with less conflict.

You will make more mistakes but you'll be able to get a truer evaluation of them and very often you'll be able to alter your plans to capitalize on them or at least to minimize their importance.

The man who never makes a mistake never does anything.

You'll find plenty of people who can tell you what you did wrong and why you should have waited for more favorable circumstances. Hindsight is better than foresight. Most people who engage in the pastime of pointing out what other people did wrong are experts. Don't argue with them. The fact many of them have never accomplished anything themselves is the small price these experts pay for their intense concentration on their intriguing pastime. Listen to the man who does things — you'll profit by his mistakes as well as your own.

Most of us create our own problems in dealing with other people.

Just a few days ago one of our good friends dropped into our office and mentioned he had received a letter he didn't understand from a business organization. He asked us what was meant by the letter but did not fill us in on what had happened. It appeared it wanted to favor him in some way because it enclosed a check. He felt it owed him nothing. He couldn't understand the reason for the generosity and that bothered him. He thought of going to a lawyer or asking advice from some people friendly to the organization. He was getting into quite a dither about the matter.

We suggested he either write or call the organization direct and ask the reason for the generosity.

Most of us are guilty of the same mistake. We approach everyone for answers to the problems that perplex us most except the people who are in the best position to give us the answers.

**All our problems would be much simpler if we faced them head-on. The solutions, good or bad, would save many hours of uncertainty and indecision.**

## Less U. S. Meat Products Going to West Germany

United States meat and livestock exports to West Germany were down 20 per cent in 1958 as compared to the previous year. Value of the products was placed at 35.6 million dollars; in 1957, the figure was 44½ million.

Hides and skins declined 17.1 per cent in volume; meat and meat products were down 7.1 per cent; and edible animal fats and oils registered the greatest drop, 43.3 per cent.

## California Researchers Studying Hay Crimping

Mechanically conditioning hay in California might be an unnecessary expense for some farmers, according to researchers at the University of California at Davis. The process might improve the harvesting schedules of others, however, they added.

In the Midwest and East, farmers can shorten drying time and lessen risk of damage from rain by crimping the hay after cutting. In California, where summer rains are rare, each farmer must weigh the advantages and disadvantages under his particular conditions, the researchers said.

In feeding trials, the average gain per 100 pounds of feed consumed by sheep was 15 to 20 per cent greater with rolled hay than with crimped or unconditioned hay.

To justify conditioning, the farmer should consider and evaluate possibilities of improved feeding response or a higher price per ton; savings on hay that might otherwise be lost or damaged because of bad weather; improved scheduling of other operations in the haymaking sequence; and reductions in time or labor required for other operations, it was said.

*A new Blue Streak mixer was installed recently at Hawarden (Iowa) Produce.*

### DANNEN PROMOTES

Promotion of Clyde Lott to the post of supervisor of the central district of the firm's country station division has been announced by Dannen Mills, St. Joseph, Mo. Mr. Lott will be in charge of 10 stations in Missouri and Iowa, and one in Kansas. He has been with Dannen since 1953.

## Anderson Named General Manager at Vit-A-Way

Appointment of Frank J. Anderson as general manager of Vit-A-Way, Inc., has been announced by the Fort Worth (Tex.) firm. Mr. Anderson is a 25-year veteran of the feed industry.

The appointee has been associated with

FRANK ANDERSON

the grain and feed business in Minnesota, Colorado, and California since 1947. He has had experience in purchasing, sales, sales management, nutrition, advertising, public relations, elevator management, and feed plant management.

## Appoint Wright Nutrition Chief at A. E. Staley

Kenneth N. Wright has been named director of nutrition for the formula feed department at A. E. Staley Mfg. Co., Decatur, Ill. He succeeds Dr. W. N. McMillen, who resigned recently.

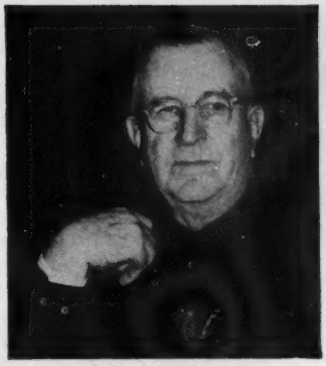
Mr. Wright is an alumnus of the University of Illinois, and was a staff member of the school's animal husbandry and nutrition department before joining Staley in 1946.

His early developmental work with Hi-Pro-Con 50 per cent protein dehulled soybean oil meal won national and international recognition for improved nutrient content and lower production costs, Staley said.

## New Posts Given Westley, Parrott at Central Soya

Election of Robert B. Parrott as executive vice president and Richard O. Westley as vice president in charge of the grain division has been announced by Central Soya Co., Fort Wayne, Ind.

Mr. Parrott will administer soybean purchasing, soybean meal and oil sales, grain merchandising, and marine and truck transportation activities. Mr. Westley's duties will include grain merchandising and marine and truck department activities.



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### THRIFT

Wife: "You remember that new dress I bought yesterday? Well, Mrs. Smith next door just came home with one like it."

Husband: "I suppose what you're leading up to is that I'll have to buy you a new one?"

Wife: "That would be cheaper than moving."

* * *

**All the world loves a lover — except a husband.**

* * *

### THOUGHTFULNESS

Newlyweds Helen and Charlie went to a big city hotel for their honeymoon, their first time in the city. They entered their hotel room.

Helen inspected the bathroom and shouted with glee, "Look, Charlie, they had this room fixed special just for us. They have our monograms on the faucets."

* * *

**They call her Napkin; she's been on so many laps.**

**Doc Anklam: By the time a man can afford to lose a golf ball, he can't hit it that far.**

* * *

### PROUD PUCKER

Darlene: "Are you going to put up any mistletoe for the party?"

Patricia: "Not me! I've too much pride to advertise for the ordinary courtesies a girl has a right to expect."

* * *

**If at first you succeed, you probably have not accomplished much.**

* * *

### DETAILS

One reason for the teacher shortage arrived home breathlessly to announce she'd received the first of a new type of comprehensive report card in high school.

"It's got all kinds of statistics and stuff on it," she informed her mother.

"Look at this!" she exclaimed, pointing to one of the mass of items. "They gave me an F in sex and I didn't even know I was taking it!"

### SAFE

She: "My husband is coming! Hide in the bathtub."

He: "Won't he find me there?"

She: "No, it's only Thursday."

* * *

**It takes a woman to make a home; two of them to spoil it.**

* * *

### THAT FIGURES

Sam: "I'm having trouble with my wife."

Mike: "What happened?"

Sam: "Well, this morning she chased me out of the house with a baseball bat. Then she was mad because I left without kissing her goodbye."

* * *

**Girls who buy cheap hosiery get a run for their money.**

* * *

### HE KNOWS

The Sunday school children were being lectured by the pastor on proper conduct.

To test their understanding of his message, the pastor selected one boy and questioned, "Can you tell me where little girls and boys go when they do naughty things?"

"Sure," was the fast reply. "They go back of the churchyard."

* * *

**As long as colored seed catalogs are printed, faith will never die.**

---

*A new Prater hammer mill and two Blue Streak mixers were installed recently at Cohoon Elevator, Midland, Mich.*

## Spencer Retires After 33 Years With Oakes

Retirement of George A. Spencer as vice president and manager of Oakes Mfg. Co. has been announced by the Tipton (Ind.) firm. Mr. Spencer had been associated with Oakes for 33 years.

He began his career with the company as general manager. When Oakes came under new management in 1930, Mr. Spencer advanced to the position of secretary and

GEORGE SPENCER

sales manager. In 1952, when the firm became a subsidiary of Food Machinery & Chemical Corp., he assumed the vice presidency.

Mr. Spencer is widely known for his leadership in continually developing and introducing improved lines of products in the poultry and hog equipment field, Oakes said.

Taking over the former responsibilities of Mr. Spencer is Davis Piper, who formerly was an administrative assistant. Mr. Spencer will continue to make his home in Tipton.

## Fulks Is Area Manager For Salsbury's Labs

Appointment of Glen M. Fulks as territory manager for southern Ohio has been announced by Dr. Salsbury's Laboratories, Charles City, Iowa.

The air force veteran attended Franklin College. He has had several years' experience in the feed and animal health industries.

## Alfalfa Hay Best for Dairy Heifers, View

Dairy heifers fed unsupplemented alfalfa silage or corn-alfalfa silage gain less weight, gain more slowly, and consume less dry matter than heifers fed alfalfa hay, according to Department of Agriculture researchers at Beltsville, Md.

Heifers at the center were raised successfully to calving time on 370 pounds of whole milk, 400 to 500 pounds of grain, and all the good alfalfa hay they wanted. Substituting silage for hay caused lower feed consumption, lower gain-rate, lower weight at calving, and lower milk and butterfat production during first lactation.

As the cows became older, production and body weight became equalized. Scientists at the center expressed the view that calves will grow normally if they get at least four pounds of grain daily in addition to all the hay-crop silage they want. Silage with less than 30 per cent dry matter would not give good results.

### PEEBLES PROMOTES

Appointment of Winfield S. Welch as sales manager of its feed products division has been announced by Western Condensing Co., Appleton, Wis. Mr. Welch joined the firm in 1950 as a sales representative.

## Hay Wafers Offer Many Advantages, Is Claim

Dairy cows do as well on wafers as they do on baled hay, according to researchers at the University of Wisconsin. Feeding trials indicate that the discs are as digestible as baled hay, cattle eat them well, and they do not lower milk production.

Cattle eat their daily diet faster when fed wafers, the researchers said. Among other advantages the wafers offer are: less storage space is needed; they are easier to self-feed; leaf loss is less; and dustiness is reduced.

Wafers also could aid in easing the job of handling hay, since they lend themselves to machine harvesting and handling. Machinery manufacturers are now working on a practical harvesting machine which will make the wafers in the field directly from the windrow.


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# Steer Fattening Rations Utilizing Byproducts of Poultry

By MAURICE L. RAY
*University of Arkansas*

**In this trial steers utilized poultry slaughter byproducts as satisfactorily as other steers utilized cottonseed meal in terms of weight gain, digestibility, feed efficiency, and carcass grade.**

Producing and processing poultry form a major industry in Arkansas. In some instances the processing wastes of the industry are discarded. Since these processing wastes are high in protein and low in fiber content it seems reasonable to assume that they might be utilized as a source of protein in the fattening rations of beef calves.

The extent to which poultry slaughter byproducts could be used as a protein supplement to replace cottonseed meal in the fattening rations of beef cattle was studied at the Arkansas experiment station. Sixteen Hereford steers were used in the 104-day feeding trial. Their average weight was 642 pounds. The steers were divided into four groups, each of which received a different grain ration.

A ration of nine parts corn and one part hydrolyzed feather meal was fed to steers in Group 1. Group 2 received nine parts corn and one part poultry blood and bone meal. The ration fed Group 3 was nine parts corn and one part cottonseed meal, while Group 4 received nine parts corn and one part supplement consisting of 50 per cent cottonseed meal, 25 per cent hydrolyzed feather meal, and 25 per cent blood and bone meal.

The steers were fed individually. Each steer was fed lespedeza hay each morning and grain in the evening. The steers were confined at night and left loose during the day in dry lot for exercise and water. Gain data and feed efficiency figures are given in Table 1.

**Table 1. Weight Gains and Feed Efficiency of Steers Fed for 104 Days**
**(Four steers in each group)**

| Measure | Rations fed | | | |
|---|---|---|---|---|
| | #1, feather meal | #2, blood and bone meal | #3, cotton-seed meal | #4, combination meal |
| Initial weight (lb.) | 642 | 663 | 638 | 626 |
| Final weight (lb.) | 846 | 892 | 845 | 850 |
| Total gain (lb.) | 204 | 229 | 207 | 224 |
| Av. daily gain (lb.) | 1.96 | 2.20 | 1.99 | 2.15 |
| Lb. feed per lb. gain | 7.64 | 7.46 | 8.53 | 7.65 |

### Rates of Gain

Animals receiving the ration supplemented with poultry blood and bone meal (Ration 2) had a higher daily gain (2.20 pounds) and consumed less feed per pound of gain (7.46 pounds) than did animals on the other three rations.

After the feeding trial, one steer from each group was placed in a digestion stall to determine the digestibility of each ration. During the five-day digestion trial the total amount of feed eaten by each animal and the total amount of feces and urine excreted were recorded. Representative samples of the feed and feces of each animal were obtained and chemically analyzed for the determination of digestion coefficients.

### Digestion Data

The digestion coefficients presented in Table 2 indicate that animals receiving poultry slaughter byproducts (Rations 1, 2, and 4) digested their rations as thoroughly and in some instances more thoroughly than did animals on the ration containing cottonseed meal (Ration 3).

One steer from each group was selected for slaughter. The steers were weighed, then taken off feed for 24 hours and weighed again to determine shrink, immediately after which they were slaughtered at the meats laboratory.

The carcass grades ranged from low good to low choice with the steer fed the poultry blood and bone meal ration (Ration 2) having the highest grade and the one fed the feather meal (Ration 1) having the lowest grade.

**A color index was used to determine the meat color of each carcass since it was postulated that differences in color of the meat might occur due to the different rations fed. However, color differences were too small to be significant.**

**Table 2. Digestion Coefficients of the Four Rations as Determined in a Five-Day Digestion Trial**
**(One steer in each group)**

| Digestion coefficient | Rations fed | | | |
|---|---|---|---|---|
| | #1 | #2 | #3 | #4 |
| | | Percent | | |
| Dry matter | 71.66 | 72.35 | 65.74 | 70.00 |
| Crude protein | 46.87 | 45.86 | 50.52 | 46.93 |
| Crude fiber | 41.88 | 44.33 | 30.32 | 27.11 |
| Crude fat | 80.83 | 68.65 | 75.27 | 76.77 |
| Nitrogen-free extract | 81.28 | 83.26 | 73.43 | 81.81 |

## Remodeling Completed at National 4-H Center

The National 4-H club center near Washington, D. C., recently marked the completion of a remodeling project. The three buildings of the center are located in Chevy Chase, Md., a suburb of the nation's capital.

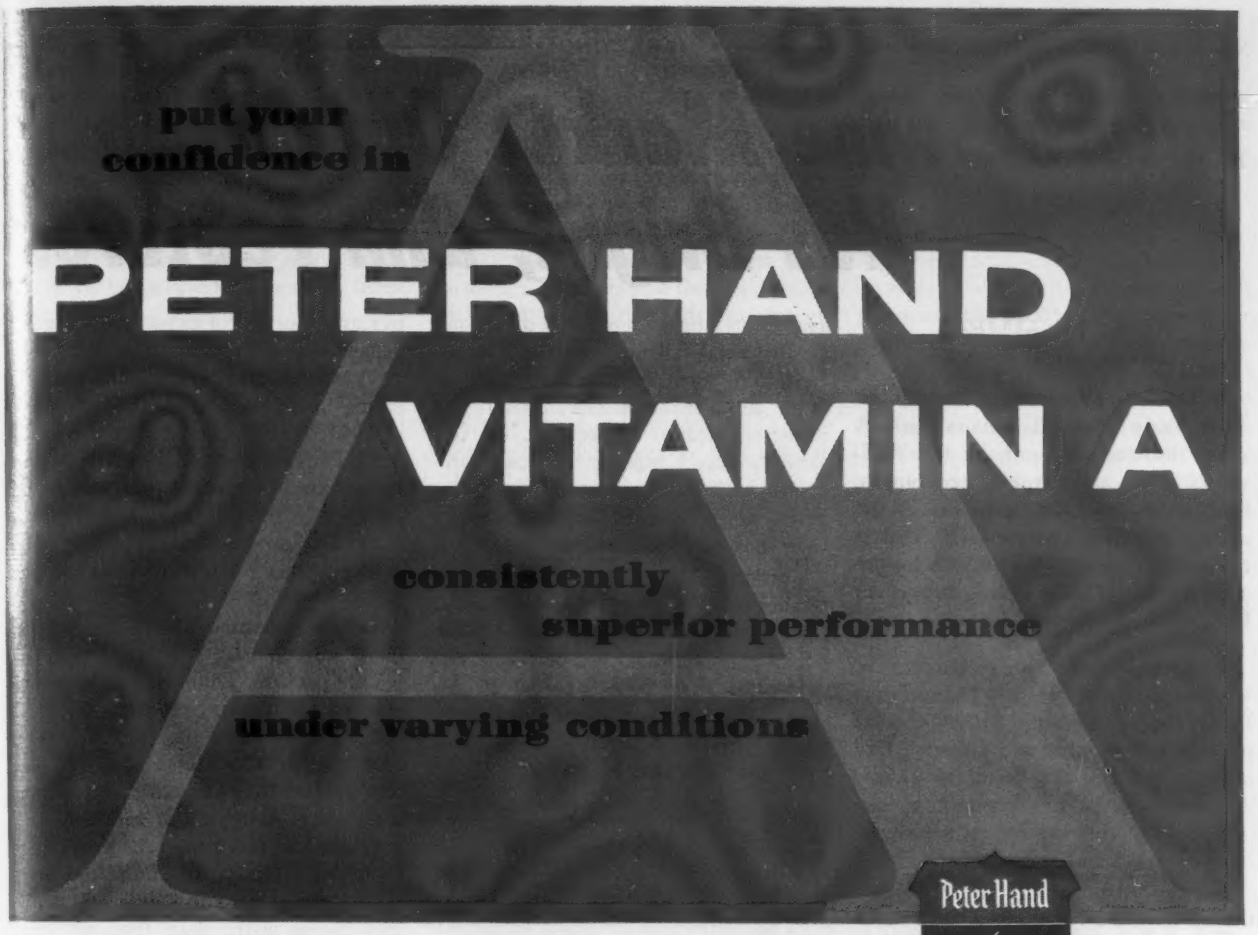
Dining facilities for 300 persons, sleeping accommodations for 270, and an auditorium capable of seating 400 are among the features of the center. Each of the three buildings is named in memory of a club leader — Dr. Clarence B. Smith, Gertrude L. Warren, and R. A. Turner.

Funds for the remodeling project came from club members, the Ford and Danforth foundations, and various states and individuals. The remodeling cost $911,000.

The center contains a recreation room, a recording room, a book store, and an air-conditioning system for the sleeping facilities. A conference room is available for delegates.

### SECO REPRESENTATIVE

Appointment of J. Marlin Hillard as sales representative for Seco, Inc., has been announced by the Goodlettsville (Tenn.) firm. Mr. Hillard is president and owner of New Holland Construction Corp., New Holland, Pa.

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# Future Swine Market Outlook Has Bright, Dim Features

By L. H. SIMERL
*University of Illinois*

**This is a penetrating analysis of what likely is ahead for the nation's swine industry by one of the Midwest's top agricultural economists. Both bright and dim spots are in the offing, the Illini analyst feels. This is the essential text of an address before a gathering of Illinois hog producers held on the campus at Urbana.**

Three years ago this past winter, the hog business was down — but not out. Prices sagged to around $10 a hundred pounds in December and January. The low prices were the result of a too-rapid increase in hog production and competition from the largest supply of beef ever sold to American consumers.

Supplies of both pork and beef continued large throughout 1956. In fact, the total supply of red meats (pork, beef, veal, and lamb and mutton) per person was the largest on record. But, as consumers became accustomed to eating more meat, prices of livestock began to move up. Hog prices started up as early as January, 1956, and cattle prices began to rise in March.

The next year, 1957, brought a sharp cut in pork supplies and a small cut in beef. In 1958 the supply of beef was slashed, and the supply of pork trimmed further. Prices of hogs (barrows and gilts at Chicago) averaged $14.82 in 1956, $18.29 in 1957, and $20.25 in 1958.

Rumors of a big increase in hog production were widespread early in 1957 and again a year ago. This increase did not, however, appear until the 1958 fall pig crop. According to USDA estimates, the fall pig crop this past year was 17 per cent larger than that of 1957, and farmers reported breeding intentions pointing to an increase of 13 per cent in the 1959 spring pig crop.

Recent market supplies of hogs have been about one-fifth greater than those of a year ago. Marketings seem likely to continue large through March, because farrowings six months earlier (in September) represented 26 per cent of total fall farrowings. (The official fall farrowing season extends from June through December.) We expected heavy marketings in this January-March quarter, because farmers had 22 per cent more pigs from three to six months old last Dec. 1 than they had a year earlier.

Marketings will be considerably smaller in the next quarter, April-June, than in the first. On the basis of number of pigs farrowed and on farms, the cut seems likely to be around 15 per cent. But market supplies will probably still be around 15 per cent larger than they were the year before.

### Fall Prospects

Looking further ahead to next fall and winter, we can still find some basis for optimism. Naturally we do not expect the unusually favorable prices of 1957 and 1958. On the other hand, there are good reasons for expecting prices of hogs to hold well above the $10 level reached in late 1955.

The supply of pork per person during the last half of this year may be no greater, and probably will be less, than it was in 1955. We can say this because farmers have reported that they plan to produce about 59 million spring pigs this year. Although this number is two per cent more than they produced four years ago, our population is seven per cent greater. Thus, even if they should increase their spring pigs three or four per cent more than they reported, hog marketings this fall will be no greater in proportion to population than they were in 1955.

Slaughter weights of barrows and gilts next fall may average around 226 pounds. That would be about seven pounds less than the average this past fall and about the same as in 1954, 1955, and 1956.

### Higher Prices

While the supply of pork per person next fall may be close to that of 1955, prices of hogs may hold up considerably better. There are three important reasons for expecting a higher price level:

1) Consumers are accustomed to eating much more pork than they ate in 1955.

2) Packers and retailers are geared up to handle a much larger volume of pork.

3) The prospective supply of competing beef is much smaller than it was in late 1955.

Let us examine the facts behind these statements:

Our packers, retailers, and consumers now are working through the 1958 fall pig crop. This pig crop has been estimated at 42,470,000 head, 25 per cent greater than the fall pig crop that was being slaughtered, retailed, and consumed at this time four years ago. In strong contrast, the indicated market supply of hogs this year will probably be no more than five per cent greater than that of four years earlier.

When we put these supplies on a per-person basis, we get the following comparisons: We are now consuming some 15 to 20 per cent more pork per person than we were at this time in 1955. But the supply in prospect for next fall is no greater, and possibly a little less, than it was in 1955.

The supply of competitive beef is also favorable to the hog market. Compared with the previous year, the supply of beef increased 20 per cent from July, 1955 to February, 1956. I expect a moderate increase in the supply of beef this fall — perhaps around five per cent, but not 20 per cent unless we have a severe and widespread drought that forces sales of cattle.

### Beef Numbers

Cattle numbers are increasing. The number of farms and ranches Jan. 1 was estimated at 96,851,000 head, which was four per cent more than one year before and about the same as the previous record high three years ago.

Numbers of beef cattle on Jan. 1 were estimated at 64,024,000 head, seven per cent more than one year before and three per cent over the

previous record high set three years earlier. All classes of beef cattle showed increases during the past year. Numbers of beef-type cows on hand equaled the previous record, while numbers of calves, heifers, and steers were at new record highs.

Some increase in marketings is probable in 1959, but the big increase seems likely to be delayed for one to three years.

Numbers of cattle on feed Jan. 1 were estimated at 6,489,000 head. This was 11 per cent more than one year before and seven per cent more than the previous record high of two years before.

What of prospects for 1959 fall pigs, to be marketed in the first half of 1960? I expect the 1959 fall pig crop to be larger than that of 1958 for three reasons:

1) The expanding phase of the hog cycle usually runs for more than one year.

2) Recent hog-corn price ratios have been favorable — around 14. This ratio seems likely to remain favorable during the next three months, when farmers will be breeding for fall litters.

3) There is an abundance of feed grains on farms all over the United States.

If the increase in fall pigs is moderate, say around five per cent, they should sell at prices that will reflect better than market values for corn.

### Cyclical Pattern

Thirty years ago we could forecast hog prices for 18 months in advance by going into the cornfields in September. A big crop meant a big increase in hog production and lower prices.

But the government price support and storage program for corn changed the pattern of hog production. It established more regular cyclical swings in hog production and prices. The swings also became more violent than formerly. This was just the opposite of what most supporters of the storage program expected.

The storage and price support program might have helped to stabilize hog production and prices if the support for corn had been kept at moderate levels. But it was kept at $1.50 to $1.60 for several years, and the swings in hog production and prices became quite violent. The most extreme was that of 1954-55, when hog prices went up to $27 and then dropped to $10.

Now that price supports for corn have been reduced, these swings may be more moderate. Uncle Sam will not provide such an attractive market for corn. Hog producers will not cut production so sharply. Prices will not go so high. Consequently, increases in hog production may not be so violent.

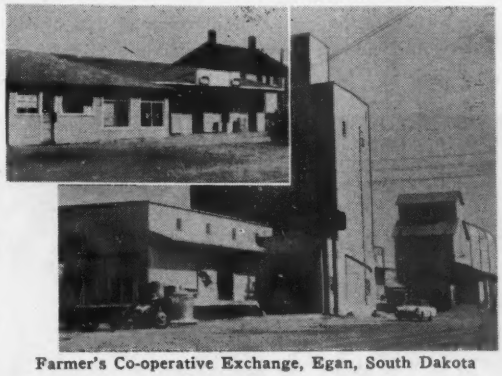
We are often asked about the prob-

THE FEED BAG

"Then I started canning the corn borers and sold 'em for hors d'ouevres."

BY GEORGE WILSON


SOLD 50 TONS of ScotchOLass in first seven months



Farmer's Co-operative Exchange, Egan, South Dakota

O'Dean Brender, Manager

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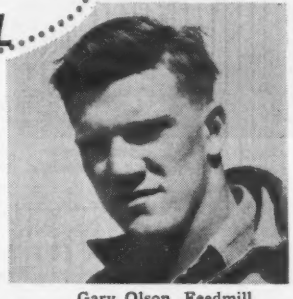

Gary Olson, Feedmill Operator, F. C. E.

VyLactos LABORATORIES, INC.

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able effect of elimination of corn acreage allotments upon livestock production and prices. Some farmers fear that corn production will increase rapidly and that livestock output will increase greatly and prices will fall to disastrous levels.

We might point out that acreage allotments for corn did not prevent prices of hogs from sinking to extremely low levels in 1955-56. I know of no reason to expect that prices will not fall to unprofitable levels at times in the future. But the elimination of corn acreage allotments, together with the reduction in price supports, may not hurt the livestock industry so much as some people think.

In the first place, the reduction of price support levels will tend to slow up technological developments that have been bringing in new acreages of feed crops. An outstanding example is the development of irrigation — wells, pumps, and irrigation equipment — in the Great Plains and the Southwest. It may also slow the rate of buildup of the less productive soils in the Corn Belt and other areas.

Second, only about three per cent of our total supply of feed was produced under acreage allotments in 1958. Not more than 10 per cent has been produced under acreage allotments at any time. The only feed ever produced under allotments has been corn, and corn provides only about one-fourth of all feed used by animals in the United States. Thus, eliminating the acreage allotments on corn will not cause the production of feed to increase so much as some people believe.

### Hogs in the Future

In the past, our hogs have been produced mostly on general farms, with three, four, or a dozen sows on each farm. We are now in the midst of a revolution in hog production. Hog production is being mechanized.

When an industry is mechanized, the size or scale of operations increases greatly. This has occurred in all of the industries, agricultural and otherwise.

The trend toward large-scale operations in crop production has been held back by our system of land ownership and tenure. You know the difficulties that prevent one farm operator from expanding from 160 acres to one-half section and then to a whole section or two or three sections.

No such limitations prevent the expansion of hog production on any farm. Many farmers can expand from 10 sows to 30 sows and then to 100 sows or more. This does not mean that total pork production will increase by any such proportion. Total meat output is limited by total feed production and by the conversion rate of feed to pork.

Feed use now exceeds feed production in any year before 1957. With average weather in 1959, feed production seems likely to be no greater than the amount that will be used the next feeding year.

The technological advances in hog production — the increasing scale of individual operations — will bring corresponding changes in the financing, management, and operation of hog production. Much more capital will be required. Risks will be greater. More managerial ability will be necessary. If present farm operators do not put these things together to produce pork at low cost, some other interests will do the job. It may be done through so-called vertical integration. In any event, whoever takes the risks will also take the profits.

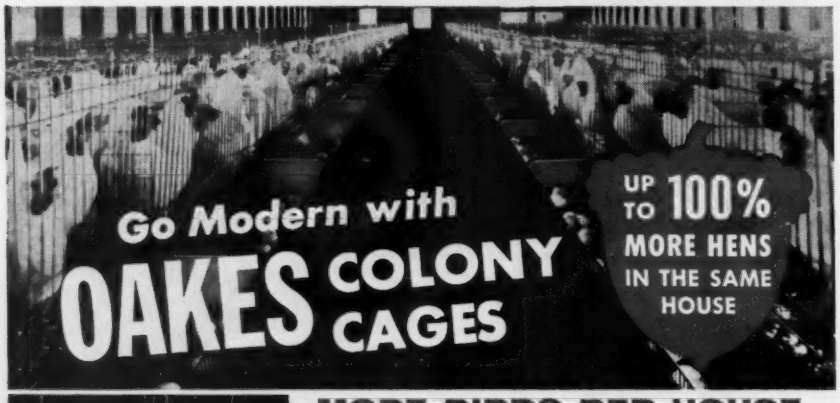
Several times in the past two years, I have heard men from southern states say, "We took the broiler business away from you. We are going to take the hog business too."

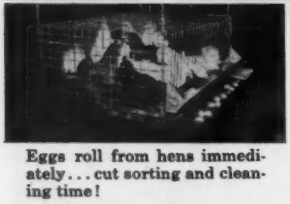
This threat is serious. True, their feed costs would be a little higher. But they have offsetting advantages. Their labor costs are lower. They have milder winters and thus lower costs for shelters. They also have cheaper land.

How fast the South goes into hog production depends upon how much profit they see in it. They can see, and make, plenty of profit with corn-hog price ratios such as we have had during the past two years.

I doubt that we can expect congress to do anything to keep the hog business in the Corn Belt. As you know, farm legislation is written largely by the agricultural committees of the house and senate. These committees, like many others, are dominated by congressmen from the southern states. They are very astute legislators and are always interested in doing something for their own constituents. Therefore, any legislation coming out of congress is likely to favor the South at the expense of the Corn Belt. This situation, of course, is not new.

**I believe that the hog business can, and should, be held and expanded in**

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**MORE BIRDS PER HOUSE**
**MORE EGGS PER BIRD**
**MORE PROFIT PER FLOCK**

**GOOD POULTRY MANAGEMENT STARTS WITH OAKES COLONY CAGES**... now, house 50-100% *more* hens, in the same area, than with individual cages or a floor operation! Each cage holds 15-20 hens. They get the *best* chance to lay more eggs, exercise in roomy 15 sq. ft. area. Result: less leg fatigue, cleaner cage floors, even droppings distribution—less fly problem. And, grouped hens withstand cold better—no sudden drop in production!

For even greater profits, team-up Colony Cages with OAKES mechanical feeders and automatic waterers.

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OAKES MANUFACTURING CO.
AN OPERATION OF
FOOD MACHINERY AND CHEMICAL CORP.
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Illinois and other Corn Belt states. It can be held here only by increasing our scale of operations and reducing per unit costs. Hog producers who do this will, I believe, make reasonable profits and a good living in the years ahead.

## Specifide Names Three Territory Supervisors

Appointment of three new territory supervisors has been announced by Specifide, Inc., Indianapolis. The appointees are Don M. Smith, H. R. (Buck) Norvell, and Carroll Snider.

Mr. Smith, who will service western Iowa and Nebraska, has been associated with the feed industry since 1932. He was most re-

Don Smith

Carroll Snider

cently employed by the Borden Co. He will headquarter at Jefferson, Iowa.

The northwestern part of Iowa will be covered by Mr. Norvell. He had previously been associated with Davenport Elevator Co. The air force veteran will work out of Emmetsburg, Iowa.

Mr. Snider will represent the firm in northeastern Iowa, southeastern Minnesota, northern Illinois, and southern Wisconsin. He formerly served with S. E. Massengill Co., and has a broad background in poultry and animal health products.

## Pelleting Barley No Aid In Calf Gains, View

A tentative conclusion that pelleted barley has no advantage over crimped barley when fed to beef calves has been reached by researchers at the University of Maryland.

The conclusion was based on only one trial. Plans are made to repeat the trial this fall. In the test, gains in both the lots fed pelleted and crimped barley were satisfactory, but the cost of pelleting the barley was $4 more per ton than crimping it.

It was indicated from the trial that pelleting barley for finishing beef calves would not be a profitable procedure. Research done at the university has shown that the feeding value of barley for growing and fattening swine was materially improved by pelleting.

### HOGG EXPANDS

A western Canada office has been opened by N. D. Hogg, Ltd., Toronto, Ont. The office and warehouse is located at 2126 Eighth av. E., Calgary, Alta. W. A. (Bill) Johnson is manager of the new branch.

## Dairy Cow Values From Tranquilizers Studied

There is little value in the general use of a tranquilizer for an entire dairy herd, according to dairymen at Colorado State University. Spotty results have been reported when the drugs are injected, and there is much disagreement on the effects of oral treatments.

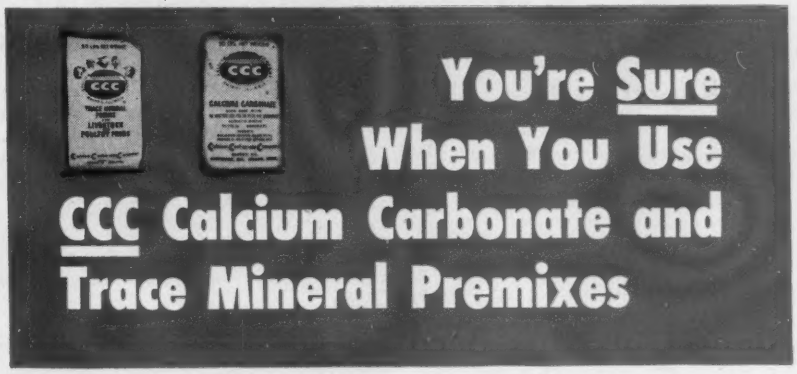
One dairyman reported that oral treatments used on cows which tended to be nervous boosted milk production. The cows were easier to handle, and no adverse affects were noted after the drugs' use was discontinued.

Injections can be of use when training nervous heifers for the milk barn, during picture-taking sessions, and on show cattle. Some cows that receive a heavy dosage become sleepy and won't eat much, it was reported. As a result, milk production drops until the effects wear off.

***The complete line of Honeggers' products now is being handled by Griffen Grain Co., Henry, Tenn.***

### GENERAL MILLS SPLIT

A proposed three-for-one split on its common stock will be presented by General Mills, Inc., to its stockholders for approval at the annual meeting Aug. 18. Also proposed are a change of shares of common stock from no par value to a par value of $3 each, and an increase in the number of authorized shares of common stock to 10 million, the Minneapolis firm said.


**CCC TRACE MINERAL PREMIXES**

Research and quality control combine to give CCC Trace Mineral Premixes correct formulation for maximum feed efficiency. CCC Trace Mineral Premixes are treated to retard oxidation of fats, oils and vitamins in feeds.

You're sure when you use CCC Trace Mineral Premixes.

**CCC CALCIUM CARBONATE**

There is a CCC Calcium Carbonate product to meet your exact mixing needs. Regular, Dustless, Electro (Free-Flowing), Stable Iodized-Manganesed, Stable Iodized, and Manganesed. For resale to farmers there is Shellmaker Calcium Grit and Barn Brite (Barnlime for farms and gardens).

You're Sure of
Good Service, Too—
Three shipping points plus modern facilities make it possible for CCC to give outstanding service.
CALCIUM CARBONATE COMPANY
CCC
QUINCY, ILLINOIS

**THE THREE PURITANS** symbolize the three CCC quarries — in Quincy, Illinois, Carthage, Missouri and Weeping Water, Nebraska—so called because of the high purity of the deposits.

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## Poll Shows Reasons for Buying Certain Feeds

A poll taken recently among Kansas farmers showed that prices, results, dealers, and quality of feed determined which brands of formula feed they purchased, according to economists at Kansas State University.

Other reasons given were: because other people use it, dealer mixing, freshness, and delivery service. Reasons for trading with certain dealers were location, friendship, prices, the fact that they were cooperatives, and quality of feed.

The researchers said that while buying because of dealer is considered not strictly a rational reason, since it doesn't deal with the product itself, it does show how strongly the dealer's reputation enters into the purchase.

## Walter Giffin Is Oakes Area Representative

Appointment of Walter W. Giffin as territory representative has been announced by Oakes Mfg. Co., Tipton, Ind. Mr. Giffin will serve Kansas and Missouri.

The appointee was previously in the insurance and wholesale hardware business. A veteran of World War II, he will headquarter in Kansas City.

## Winners of Miss Beco Weight Contest Named

Winners of the Miss Beco weight-guessing contest held at the National Feed Show in Chicago have been announced by Burrows Equipment Co., Evanston, Ill. They are:

Frank E. Rice, Early & Daniel Co.; Mrs. R. W. Berger, Ohio Farmers Grain & Supply Co.; and Orvel H. Cockrel, Hales & Hunter Co.

Miss Beco weighs 110 pounds, the firm said. Twenty-seven contestants had the right answer so the winning cards were placed in a hat and the model drew out the names of winners.

## California Youngster Is Pfizer Contest Winner

First-prize winner in the seventh annual livestock judging contest sponsored by Chas. Pfizer & Co., Inc., was Darrell L. Silveira of Tranquillity, Calif. The 16-year-old student and his vocational agriculture teacher, William Braun, were awarded a trip to Europe.

The youth's prize-winning 1,000-word essay topped those of 14 other regional winners in the New York City firm's contest. The essay was on the life-cycle feeding of hogs and its economic advantages to hog raisers.

## Sprinkling Hogs Is of Little Value, View

Sprinkling growing-finishing hogs which are confined to concrete feeding pens during the hot summer months apparently is of little value, judging from tests conducted recently at the University of Kentucky.

In the tests, hogs which were sprinkled 12 hours daily averaged 1.61 pounds daily gain, while the unsprinkled group averaged 1.49 pounds. Daily feed consumption was about the same, as were average final weights.

A difference was noted in the consumption of supplement, however. The sprinkled group used 68.14 pounds during the trial, while the unsprinkled hogs consumed 49.71 pounds.

## New Raw Material Seen In High-Amylose Starch

The corn refining industry may have a new raw material in high-amylose starch, it has been predicted by the Department of Agriculture. Plant breeders in 10 years have raised the level of the starch in experimental hybrids from 27 to more than 80 per cent.

In 1958, commercial producers raised several thousands bushels of corn with starch of 50 to 60 per cent amylose. This has provided, for the first time, enough of the substance for industrial-scale milling and processing trials, USDA said.

*H. W. Brace Co., Superior, Wis., recently installed a new Strong-Scott molasses regulator.*

## West Germany's Wheat Shows Gain Over 1958

West Germany's wheat acreage for 1959 is estimated at 3,323,000 acres, about three per cent more than last year's figure. Relatively little winterkill is expected to aid in boosting the grain crop over 1958.

A shift from rye to wheat is indicated, with rye acreage down about six per cent. Rye acreage this year is estimated at 3,460,000 acres, compared with 3,688,000 last year.

## Berry Retires After 36 Years in Industry

Retirement of Joe S. Berry as head of the poultry feed department has been announced by Hales & Hunter Co., Chicago. Mr. Berry joined the firm in 1940 as manager of its duck and crate fattener department.

He has been in the feed industry for 36 years, having been associated with Ralston Purina Co. for 17 years before joining Hales & Hunter. Mr. Berry plans to tour Europe this fall.

*A Big H four-way franchise was awarded recently to Graves County Hatchery, Mayfield, Ky.*

## The Barnyard Gate

BY JOHN DAWSON

"There's lots of nice berries here among the poison oak, Aunt Nettie."

# The "champs" for breeding and fattening use supplements made with "feed urea"

**Dorothy Fae Siehl** of Grinnell, Iowa, is paying part of her way through college on money from the sale of this Grand Champion Hereford, which was fed a ration containing PROCADIAN® Urea. Her brother and sister have also won high honors at the Denver show. Her father, John Siehl, noted for his valuable purebred bull sales, says, "These animals are proof to me that urea in a well-balanced formula feed achieves maximum bloom and finish with economy."

**Gail Bauer** of Broughton, Kansas, has used feed containing PROCADIAN Urea for four years. He says, "After I changed to this supplement, my results have been much better. A recent lot of steers gained 2.78 pounds per day on 2 pounds of supplement containing urea, plus ground ear corn, milo and hay."

## *It pays to use* **PROCADIAN® UREA** *in your feed*

**Thousands of farmers** know your high-quality feeds containing PROCADIAN Urea Feed Mixture are excellent for meat and milk production at a profit. This pure, easy-mixing source of protein is so concentrated that you have plenty of room in the bag to supply all the energy, minerals, vitamins and other essentials of a balanced supplement for cattle or sheep. This helps the animals to get top feed value out of their entire ration. It pays to use PROCADIAN Urea in all your ruminant feeds. Order PROCADIAN Urea today!

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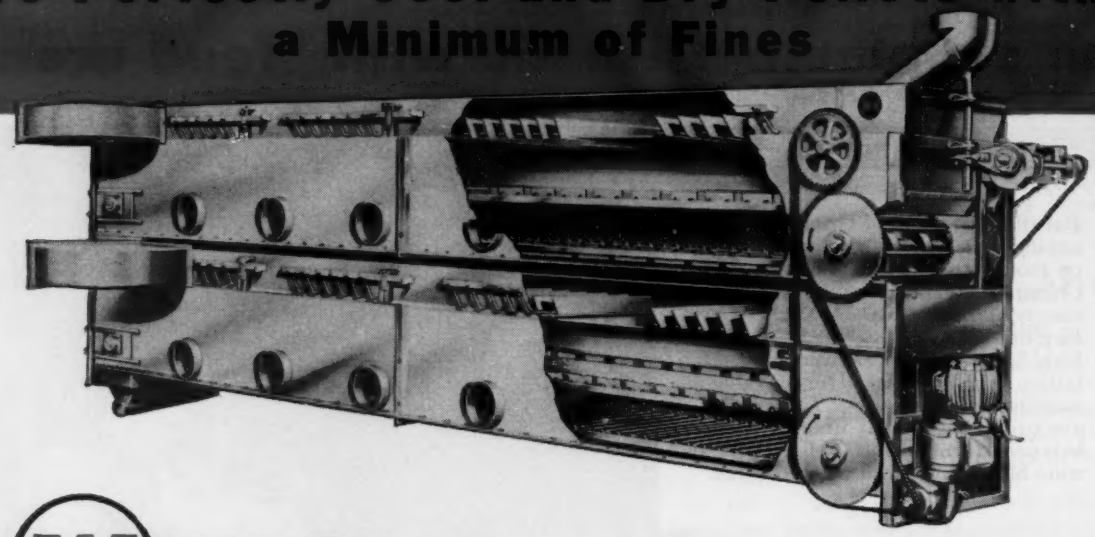
40 Rector Street, New York 6, N. Y.
*Sales offices in leading farm areas*

Allied Chemical

# To Perfectly Cool and Dry Pellets with a Minimum of Fines



## Wenger ROLLER CHAIN MODEL HORIZONTAL PELLET COOLERS

**HERE IS WHY... The Wenger ROLLER CHAIN MODEL PELLET COOLER/DRIER has no equal in the field of cooling and drying pellets.**

● Roller chain model (illustrated here) has ¾" transverse steel rods, is equipped with rollers, supported on angle iron rails, linked together on 4" centers with steel plates, chain driven over a serrated head pulley, equipped with special fines pickup on foot pulley, woven wire mesh screen with welded selvedge, belt take-up, fines collection system and oscillating pellet spreader.

● Plenum chamber with adjustable louvers runs full length of each stage of cooler. This permits positive equalization of air movement through every square foot of belt area, and is not possible with any other cooler. Minimizes belt area required to do perfect cooling and drying job.

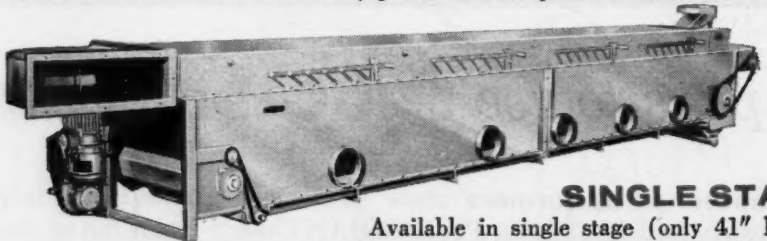
● Horizontal construction means all pellets get easy handling within cooler unit. They are properly dried. This means great reduction in fines. Variable speed drive permits adjustment of depth of bed to optimum for various sizes of pellets to be cooled. Cooling poultry pellets is relatively simple, and requires only a shallow bed of pellets. Cooling larger pellets, however, requires greater retention time in air stream since bound moisture is difficult to remove from the heart of a large pellet or range cube. This variable bed possible only in horizonal coolers.

● Wenger two stage horizontals (illustrated above) have plenum chamber and divider between lower and upper stages. This means that the driest air available is used to cool and dry pellets on both passes of coolers.

**TRY A Wenger**

**You'll Never be Satisfied With Anything Less.**

Write today for illustrated booklet, specifying tons per hour in largest pellet handled.



**SINGLE STAGE**

Available in single stage (only 41" height makes it ideal for suspension from ceiling beneath pellet mill to eliminate that old headache of hot legs), or in two stage superposed coolers (at top) which discharge pellets immediately beneath pellet inlet. Both built in 10', 12', 14', 18', 24', 30', 40', 50' lengths.

**Wenger Mixer Manufacturing**
SABETHA, KANSAS · PHONE 111

Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

## Eastern Distributor for Cesco Dumpers Named

Manufacture and distribution of Cesco dumpers in the eastern half of the United States will be handled exclusively by Conveyors & Dumpers, Inc., of West Orange, N. J. Producer of the dumpers is Colson Equipment & Supply Co., Los Angeles.

The Cesco dumper is a cable and pulley-operated vertical conveyor that lifts, upends, and dumps bags, barrels, boxes, and similar containers. Lifting capacity ranges from 100 to 1,500 pounds. It can reportedly handle up to 100 loads per hour.

Dumping heights range up to 20 feet for stationary models, and from six to 10 feet for portable models. Western distribution will continue to be handled by Colson's Los Angeles plant. For full facts, circle Reader Service No. 8.

## Protein Counted in 3½ Minutes With Udy Unit

A reliable protein count can be had in 3½ minutes with its new Udy protein analyzer, according to a claim by Hegman, Inc., Minneapolis. This compares with 1½ hours under present methods, the firm said.

The unit permits country grain buyers, terminals, or millers to make immediate tests for protein instead of waiting for a laboratory report, Hegman said. The instrument takes less space that half a standard desk top.

A gram of wheat is placed within a container along with a fixed amount of dye. After three minutes, the sample is removed and tested in a colorimeter, which is calibrated to a reference dye sample. The amount of dye bound by the protein in the sample reportedly determines the protein content. For more information, circle Reader Service No. 13.

## Pfizer Films Described In New 12-Page Catalog

A new 12-page catalog describing films available to agricultural and other groups is currently being offered by Chas. Pfizer & Co., Inc., New York City. Some of the agricultural films are:

"Dynamic Careers Through Agriculture," "A New Way to Get More Eggs," "Corralling Shipping Fever," "Increased Income From Hogs," "Victory Over Scours," "Tranquilizers — a New Idea in Animal Feeding," and "I Open the Door," a film dealing with a day in the life of a home demonstration agent.

The 16-mm. sound films are offered on loan without charge to representatives of schools, colleges, farm audiences, medical and pharmacy groups, civic and service organizations, parent groups, and others. For a copy of the catalog, circle Reader Service No. 14.

*A new Blue Streak mixer was installed recently at Forest Grove Feed, Hudsonville, Mich.*


WE SERVICEMEN RECOMMEND

Whitmoyer HISTOCARB

FOR CONTROLLING BLACKHEAD IN CHICKENS

HISTOCARB—in the mash—helps control blackhead without causing any unfavorable side reactions. There is no adverse effect on feed consumption or egg production.

Get our free illustrated folder "How to Recognize and Control Blackhead".

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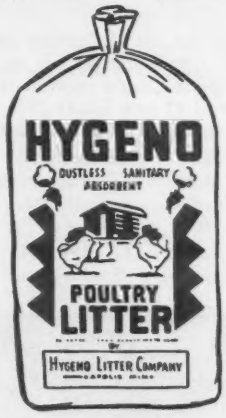



*The ONLY Litter with PATENTED Feature for DISEASE CONTROL*

- DUST-FREE
- ANTISEPTIC

HIGHLY ABSORBENT, TOO!

Respiratory disease goes down when HYGENO is spread on the brooder house floor. Chick mortality drops, too! Heaviest advertising campaign in 25-year Hygeno history will tell this story to poultrymen for you.

HYGENO DOES MORE

- Dust-free
- Antiseptic
- Treated for fire resistance
- High absorbent
- Discourages litter picking (cause of disease in other litters)
- Covers economically

HYGENO PAYS YOU MORE

- BETTER MARGIN
- COSTS LESS
- BUILDS REPEAT CUSTOMERS

*GET THE FRANCHISE!*

SEE US AT APHF, ST. LOUIS OR WRITE

NATIONAL IDEAL COMPANY

TOLEDO 6, OHIO

# Lilly Dedicates Its Ag Research Unit

**Eli Lilly & Co., Indianapolis, last month dedicated its new five-million-dollar research center for agricultural sciences at Greenfield, Ind. The 500-acre center is devoted to animal nutrition, plant science, and veterinary research.**

By THEODORE P. THERY
*Reported From Greenfield, Ind.*

On hand for the dedication ceremonies were 350 representatives of agriculture, science, business, and government. The guests viewed 15 new buildings and several previously constructed at the center.

Main speakers at the dedication were Dr. Thomas P. Carney, Lilly vice president for research, development, and control; Dr. Earl L. Butz, dean of agriculture at Purdue University; Dr. Byron T. Shaw, administrator of the Agricultural Research service; and Dr. Jean F. Downing, director of Lilly's agricultural research division.

Some of the more outstanding features of the new center is a modern feed mill, now in final construction stages. Animals are housed in well-engineered barns, which include a 726-foot long barn for 240 cattle and 400 sheep and a 10,000-bird broiler house.

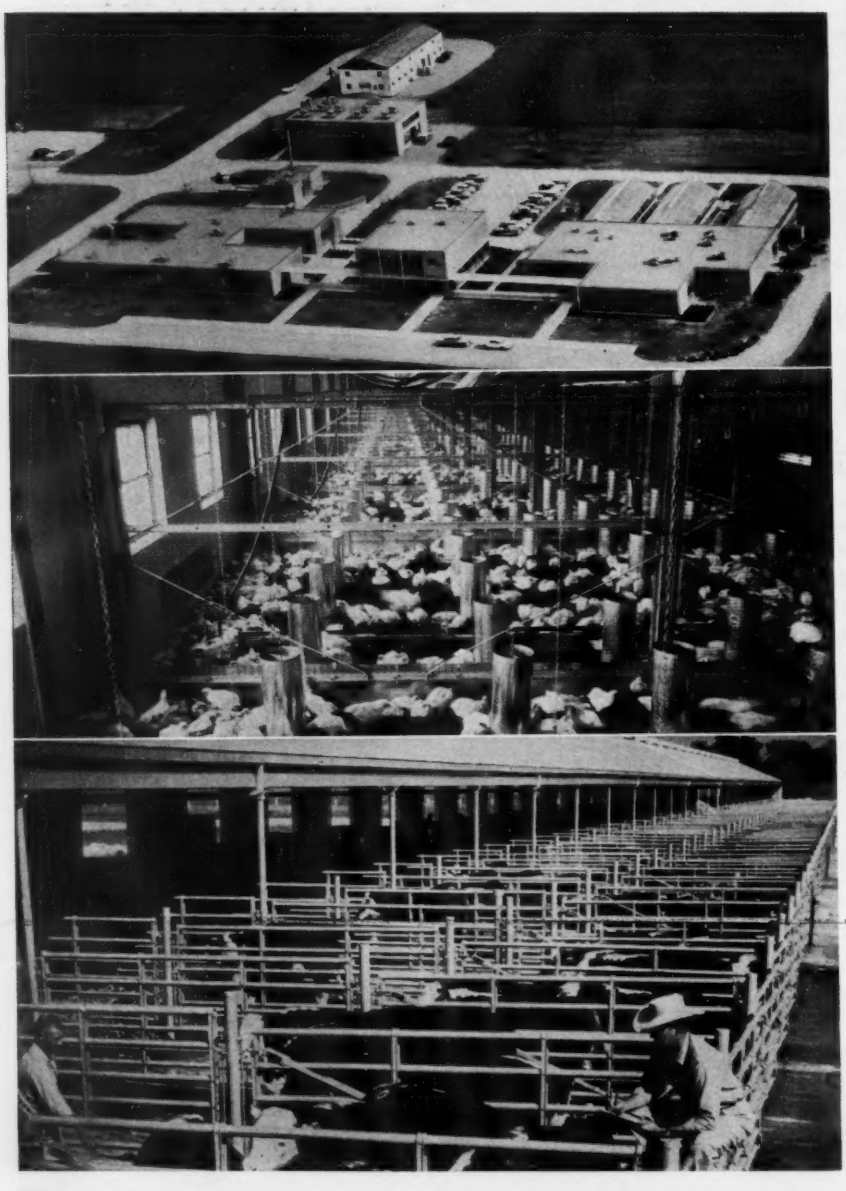
The plant science building features astronomical clocks that control simulated climatic conditions for plant growth studies, air conditioned greenhouses, a specially-designed plant treatment room, and laboratory facilities for insect studies.

Aiding in veterinary research are facilities such as specially-constructed isolation rooms and cages, a diet kitchen for preparing specific rations, a walk-in steam sterilizer, and an operating room.

The Indianapolis pharmaceutical house was founded in 1876. It now has some 1,300 persons employed in research work alone. In his talk, Dr. Carney described the firm's wide interest in total company research.

Explaining why Eli Lilly & Co. entered agricultural research, Dr. Carney said, "I have maintained for a long time that research in any single field of applied science is a rather inefficient research.

"It is inefficient in that it does not — in fact, cannot — use all of the results that inevitably come from its research. I suppose, therefore, that the dominant reason that I believed initially that we could succeed in this endeavor was the tremendous reservoir of scientific talent and information that we have available as a result of developments over the years."



**VETERINARY science, administration, and plant science buildings are shown in top photo. Center view is of the big new 10,000-bird broiler house. The 726-foot long barn houses 240 yearling cattle and 400 sheep.**

## Krason Now Sole Owner Of Deutsch & Sickert

Anton Krason has purchased all outstanding stock of Deutsch & Sickert, Inc., pioneer Milwaukee feed jobbing firm. Mr. Krason bought the interest held by the estate of the late Ben Krieg.

Mr. Krason and Mr. Krieg had been associated together for many years in the firm. The company was started at the turn of the century by the late Otto Sickert and Hermann Deutsch.

A new addition to the firm is Tom Krason, son of the owner. He most recently completed an enlistment in the air force and will be learning the ramifications of the feed jobbing business.

## Former Wayne Soy Chief, Jack Quinlan, Is Dead

John J. Quinlan, former executive vice president of Allied Mills, Inc., Chicago, died in June. He had recently returned from a Caribbean cruise and had been ill only a short time before his unexpected death.

Mr. Quinlan had retired from the Wayne post last Dec. 31. He had been an employe and officer of the firm and its predecessor companies for almost 39 years. He is survived by his wife, a son, two daughters, 12 grandchildren, his mother, and two sisters.

### STALEY MANAGER

Roy E. Adams has been named manager of A. E. Staley Mfg. Co.'s Riverdale (Ill.) formula feed plant, it has been announced by the Decatur (Ill.) firm. He succeeds Ted L. Mitchell, who has been appointed manager of the company's formula feed sales department.

# *New Text Features Feed Manufacture*

Twenty-two pages of a new university textbook are devoted to the history of the formula feed industry and the science of feed manufacturing. The section is part of "Cereals as Food and Feed," a 732-page volume just released by Avi Publishing Co., Inc., Westport, Conn.

Bruce W. Smith, editorial director of The Feed Bag, was selected by Dr. Samuel A. Matz, general editor of the new text, to prepare the section entitled "Feed Manufacture." Included are five illustrations, one a typical modern feed tag.

Mr. Smith aimed at writing a lucid explanation of feed production and formulation which would be intelligible to the student not acquainted with the industry. The result is a step-by-step chronology of the growth and importance of the feed trade, dating back to the great Buffalo flood of 1888, believed by many to be the beginning of today's feed industry.

Contributors of other sections of this new cereals text include R. C. Bradshaw, Quaker Oats Co.; Charles Feldberg, Chas. Pfizer & Co.; Robert Larsen, Pillsbury Co.; and Dr. John A. Shellenberger, Kansas State University.

## Fjellman, Styron Named Borden Representatives

Appointment of Paul T. Fjellman and D. M. (Mike) Styron as feed supplement sales representatives has been announced by the Borden special products company, New York City.

Mr. Fjellman was associated for 20 years with Archer-Daniels-Midland Co. He will

P. T. Fjellman

D. M. Styron

service the north central states and will headquarter at Minneapolis.

Mr. Styron formerly was associated with Tarkio Molasses Feed Co. He will headquarter in Kansas City, and cover the firm's sales area in the west central states.

## Abbott Gets Patent on Gallimycin Products

A patent covering the company's Gallimycin products has been granted to Abbott Laboratories, North Chicago, Ill. The formulas contain erythromycin thiocyanate, and erythromycin stearate plus other salts to be mixed with feed or drinking water for treating respiratory and other infections in poultry.

Also covered by the patent is the use of any erythromycin salt in amounts ranging from 0.0025 per cent to 0.2 per cent by weight of composition in feed, drinking water, or other orally-ingestible vehicles to treat respiratory infections in animals.

## Fifty Steinlites Shipped By Seedburo in One Day

Fifty new 500-RC Steinlite moisture testers were included in a recent one-day shipment by Seedburo Equipment Co., Chicago. Company spokesmen said that the large shipment was an indication of good economic conditions in the grain industry.

Thirty of the testers were sent to Acme-Goodrich, Inc., Winchester, Ind. Another 20 were taken by Evans Grain Co., Salina, Kan.

***Glen Staley Feed Co., Rowan, Iowa, recently installed a new Strong-Scott hydraulic lift.***

ELEVATE YOUR PROFITS
WITH
Universal
bucket
elevators
cky Ele tor" shows the extra profits t are y rs when you use a Universal cket Eleva with its trouble-free opera- n. Through over 50 years of research and dern production methods, Universal offers a more compact, cleaner operating, smoother running elevator at lower initial cost, low operating cost, and minimum maintenance and repair.
Universal Elevators are available for capacities of 50 to 3,000 bushels per hour, and can be obtained for any exact height.
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Universal guarantees complete satisfaction within 60 days or full purchase price will be refunded. Materials and workmanship guaranteed for one year.
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3-WAY VALVE
6-WAY VALVE

# —Quality Assay

*(Continued from page 7)*

da feeding stuffs act (1) requires all formula feeds to be labeled to supply the following information: name and address of the manufacturer, class of poultry for which the feed is intended, a list of all the ingredients contained in the ration, the minimum protein and fat content, and maximum fibre content. Every feed formula has to be registered with the Department of Agriculture.

It is generally realized that the proximate analyses of rations do not adequately assess nutritive value and that additional information is necessary. There are many intangible factors affecting the acceptability of a ration. Such things as texture, freshness, size of particles, color, and flavor are important. The most critical method of evaluating the overall quality of a feed is by determining its performance under standard conditions when fed to the class of poultry for which it is intended.

The South African bureau of standards (2) showed an awareness of the shortcomings of ordinary laboratory analyses for poultry feeds when in 1950 in addition to specifying methods for chemical and microbiological analyses of poultry feeds, it outlined a procedure to be followed in carrying out "chicken growth tests."

One of the earliest proponents of the biological method of assaying feeds was Dr. F. W. Quackenbush, head of the department of agricultural chemistry at Purdue University, who at one time was president of the Association of American Feed Control Officials. In 1952 Quackenbush (3) reported tests with 27 commercial broiler rations purchased in Indiana. The rations varied markedly in the rate of growth which they promoted and in the efficiency with which they were utilized. Quackenbush made the interesting observation that while protein content formerly was a fairly good index of the performance of a commercial ration, this is not necessarily true with the high protein feeds used today.

Combs and Twining (4) have studied the growth of chicks fed 18 commercial rations and found that the performance index of rations ranged

$$\text{performance index} = \frac{\text{weight in grams}}{\text{feed/gain}}$$

from 270 to 140 with an average of 217. The Maryland feeding trials were carried out on chicks to four weeks of age which was deemed by the investigators to be an adequate time to determine differences in broiler starting feeds.

Fangauf, Vogt, and Barlöwen (5) on the basis of divergent results obtained in the course of feeding tests with different rations have recommended that chemical analysis of feeds should be supplemented with chick growth tests. They feel that such tests would reveal deficiencies which may not be evident from chemical analyses.

Some of the larger feed manufacturers in Canada and the United States have the necessary facilities for carrying out biological tests. Others depend upon field observations and results. Some feed manufacturers make use of the services of commercial laboratories specializing in biological assays. In several states of the United States, feed control officials conduct biological tests on samples of feed obtained on the open market. Most of the tests to date have been confined to chick starters and broiler rations but undoubtedly methods will be developed for short term testing of laying and breeding rations.

### Experimental

From 1954 to 1956 biological assays were carried out periodically on commercial chick starting and broiler rations offered for sale in British Columbia. The object of the tests was twofold. In the first place, the assays constituted a study of the quality of British Columbia poultry feeds. Secondly, the tests were designed in such a way

TABLE 4

SUMMARY OF RESULTS OBTAINED ON QUALITY OF CHICK STARTING RATIONS IN TEST 5514

| Ration No. | Av. wt. of chicks 6 wks. (gms.) | Quality Rating | Efficiency | Rating | Performance Index | P. I. Rating |
|---|---|---|---|---|---|---|
| 1 | 624 | 100 | 2.52 | 98 | 248 | 98 |
| 2 | 488 | 78 | 2.76 | 89 | 177 | 70 |
| 3 | 510 | 82 | 2.49 | 99 | 205 | 81 |
| 4 | 594 | 95 | 2.34 | 105 | 253 | 100 |
| 5 | 580 | 93 | 2.42 | 102 | 240 | 95 |
| 6 | 610 | 98 | 2.32 | 106 | 263 | 104 |
| 7 | 496 | 80 | 2.72 | 90 | 182 | 72 |
| 8* | 622 | 100 | 2.46 | 100 | 253 | 100 |
| 9 | 594 | 95 | 2.38 | 103 | 250 | 99 |
| 10 | 574 | 92 | 2.44 | 101 | 235 | 93 |
| 11 | 588 | 94 | 2.49 | 99 | 236 | 93 |
| 12 | 551 | 88 | 2.60 | 95 | 212 | 84 |
| 13 | 584 | 94 | 2.55 | 96 | 229 | 91 |
| 14 | 576 | 93 | 2.54 | 97 | 227 | 90 |
| 15 | 605 | 97 | 2.38 | 103 | 254 | 100 |
| 16 | 644 | 104 | 2.42 | 102 | 266 | 105 |

* Reference ration

TABLE 3

SUMMARY OF RESULTS OBTAINED ON QUALITY OF BROILER RATIONS IN TEST 5547

| Ration No. | Av. wt. of chicks 6 wks. (gms.) | Quality Rating | Efficiency | Rating | Performance Index | P. I. Rating |
|---|---|---|---|---|---|---|
| 1 | 584 | 96 | 2.38 | 103 | 256 | 99 |
| 2 | 485 | 80 | 2.96 | 79 | 164 | 63 |
| 3 | 460 | 76 | 2.60 | 90 | 177 | 68 |
| 4 | 595 | 96 | 2.16 | 108 | 275 | 106 |
| 5 | 484 | 82 | 2.60 | 90 | 190 | 73 |
| 6 | 574 | 95 | 2.34 | 104 | 256 | 99 |
| 7 | 615 | 101 | 2.33 | 100 | 264 | 102 |
| 8 | 644 | 106 | 2.08 | 112 | 310 | 120 |
| 9 | 560 | 92 | 2.44 | 96 | 230 | 89 |
| 10 | 652 | 107 | 2.14 | 109 | 304 | 117 |
| 11 | 586 | 97 | 2.45 | 96 | 239 | 92 |
| 12 | 592 | 98 | 2.30 | 102 | 257 | 99 |
| 13 | 526 | 87 | 2.47 | 95 | 213 | 82 |
| 14 | 492 | 81 | 2.72 | 86 | 181 | 70 |
| 15* | 606 | 100 | 2.34 | 100 | 259 | 100 |

* Reference ration

that the experimental data might be useful in the development of standard procedures for the chick assay of the nutritive value of feeds. Altogether 114 samples of chick starter and 72 samples of broiler rations have been tested. A reference chick starter and a reference broiler ration were formulated and used as control diets (Table 1). The same formulas were used in each test throughout the three-year period.

Uniform environmental and management conditions were maintained in all of the assays in order that the data of different tests would be as nearly comparable as possible. The chicks were reared to six weeks of age in battery brooders with free access to feed and water. Duplicate lots of 20 to 25 chicks were fed each of the rations.

The chicks used in the assays of chick starting rations were pullets from a laying strain of New Hampshires. The same strain of birds was used in all of the tests on chick starters.

The same parental stock was also used as the source of chicks for most of the broiler ration assays. Two assays, however, were carried out to determine if the same range of quality was obtained when the rations were fed to different strains of birds. Since the chicks used in most of the assays were not from a fast-growing strain, the chicks chosen for use in the comparative tests were of a meat type hatched for broiler production. Tests employing the latter birds were run concurrently with tests on identical rations using the university's strain of New Hampshires.

The data obtained in the assays will be discussed under the following headings:

1) Quality of rations tested
2) Comparison of quality ratings


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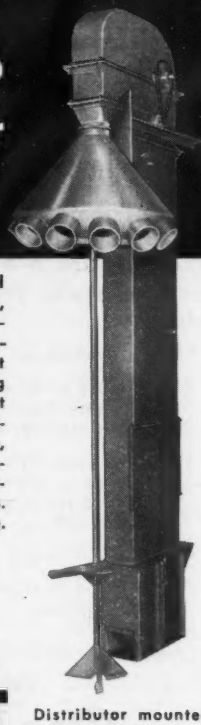

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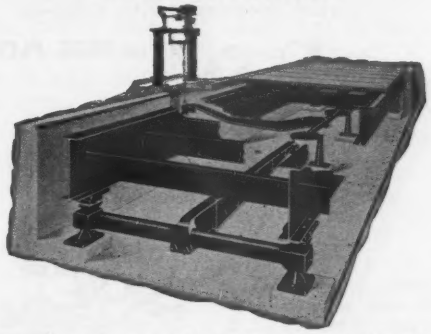

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based on four and six-week weights

3) Effect of strain of birds used on quality ratings
4) Feed efficiency and performance indices
5) Performance indices in relation to chemical analysis

1) **Quality of rations tested** — A quality rating for each of the rations tested was calculated from the average weights of chicks fed that ration and the average weight of chicks fed the university reference ration within the assay in which the ration in question was tested.

$$\text{quality rating} = \frac{\text{Average weight of chicks fed Ration "X"}}{\text{Average weight of chicks fed university reference ration}} \times 100$$

The frequency distribution of the quality ratings for the chick starting rations and for the broiler rations were calculated separately and are shown graphically in Figure 1. There was a much greater range in the quality of the chick starters than in that of the broiler rations. The broiler rations were for the most part of higher quality than the starter rations. Whereas only one per cent of the broiler rations had a rating of less than 75, 10 per cent of the starter rations had ratings lower than 75. Furthermore, 51 per cent of the broiler rations rated 95 or better but only 26 per cent of the starter rations were in this category. The difference in quality between the two types of ration doubtless reflects the competition that exists among feed manufacturers in meeting the demands

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of broiler producers.

**2) Comparisons of four-week and six-week results** — The quality ratings of the rations in the various tests were calculated on the basis of both the four and six-week weights of the chicks fed the rations. In Figure 2 the frequency distribution of the rations according to their quality ratings, calculated from the four-week weights, is shown. As on the basis of the six-week weights, the chick starting rations showed a greater range in quality than did the broiler rations. Of the broiler rations, 48 per cent rated 95 or over. In the case of the starter rations, 32 per cent of the rations were in this range. Conclusions regarding the general quality of commercial broiler and starter rations would consequently be similar whether based on the results of a four or a six-week assay period.

The quality rating values obtained for different rations when calculated from the four and six-week results are shown in Figures 3-6. No consistent differences are apparent between the results obtained at four and six weeks. In some of the tests the four-week values were slightly higher than those obtained at six weeks. In other tests the converse situation occurred. In very few instances was the value obtained on the basis of the four-week assay appreciably at variance with that of the six weeks' results.

**3) Effect of strain of birds used on results obtained** — Since the chicks used in assaying the broiler rations were not from a fast-growing strain, it was considered desirable to compare the response of these chicks to the response of chicks of a "meat strain." Rations 1-5 tested in Test 5539B (Figure 6) were samples from the same lots of feed indicated as Rations 1-5 respectively in Test 5539A. The chicks in Test 5539B were from a "meat strain" of New Hampshires. The relative quality ratings obtained in the two assays are shown in Figure 7. The relative order of the rations on the basis of their quality ratings was not affected by the strain of chicks on which the rations were tested. It is interesting to note that with four of the rations the more rapidly-growing strain gave slightly higher values.

Comparison was made in Tests 5547 and 5548 of the relative response to different rations of University of New Hampshire chicks and of crossbred chicks. Rations 1-5 in Test 5547 were samples of the same lots of feed indicated in Test 5548 as Rations 6, 1, 2, 14, and 11, respectively. As will be seen from Figure 7, the quality ratings for the different rations did not vary appreciably between the two strains tested. In these tests Rations 3 and 4 had the lowest quality rating. It may be significant that in the case of these two rations the quality ratings were again slightly higher when calculated from the growth response of the faster-growing chicks.

It is of interest to note the degree of uniformity in the growth rate of the chicks fed the reference rations in the various assays over the three-year period. The average weights of the chicks in the controls for each of the tests employing the University of New Hampshire chicks are shown in Table 2. Considering the fact that the tests were conducted over a period of three years, the growth rate of the chicks fed the reference rations may be considered to be fairly uniform. There was less variability in the growth rate of the chicks fed the broiler ration than in those fed the chick starter.

TABLE 5

COMPARISON OF CHEMICAL COMPOSITION OF RATIONS AND THEIR PERFORMANCE IN BIOLOGICAL ASSAYS

| | Manufacturer's Guarantee | | | Analysis* | | | Av. wt. of Chicks at 6 wks. | Feed Efficiency | Performance Index |
|---|---|---|---|---|---|---|---|---|---|
| | Protein (min.) | Fat (min.) | Fiber (max.) | Protein | Fat | Fiber | | | |
| | % | % | % | % | % | % | | | |
| 1 | 20 | 3.5 | 8.0 | 21.4 | 5.8 | 5.3 | 572 | 2.37 | 241 |
| 2 | 20 | 3.5 | 5.5 | 23.2 | 4.5 | 4.8 | 564 | 2.47 | 228 |
| 3 | 18 | 3.5 | 5.5 | 18.3 | 4.6 | 5.6 | 546 | 2.89 | 189 |
| 4 | 18 | 5.0 | 5.0 | 19.7 | 4.3 | 4.8 | 550 | 2.74 | 201 |
| 5 | 20 | 3.0 | 7.5 | 21.8 | 5.3 | 6.4 | 522 | 2.66 | 196 |
| 6 | 20 | 2.5 | 5.0 | 23.4 | 5.3 | 4.9 | 568 | 2.56 | 222 |
| 7 | 20 | 3.5 | 5.5 | 23.9 | 4.2 | 4.9 | 604 | 2.31 | 261 |
| 8 | 18 | 4.0 | 6.0 | 18.3 | 5.1 | 6.2 | 458 | 2.92 | 157 |
| 9 | 18 | 6.5 | 7.0 | 19.8 | 5.8 | 5.1 | 494 | 2.72 | 182 |
| 10 | 20 | 3.5 | 7.0 | 21.3 | 6.9 | 5.4 | 482 | 2.83 | 170 |
| 11 | 20 | 4.0 | 7.5 | 21.2 | 5.1 | 6.8 | 539 | 2.44 | 221 |
| 12 | 18 | 4.0 | 5.0 | 20.9 | 4.4 | 5.2 | 578 | 2.58 | 224 |
| 13 | 20 | 3.0 | 7.5 | 21.8 | 5.2 | 6.3 | 514 | 2.68 | 192 |
| 14 | 19 | 3.5 | 7.0 | 20.7 | 4.2 | 5.8 | 590 | 2.57 | 230 |
| 15 | 18 | 3.5 | 6.0 | 17.9 | 4.5 | 6.8 | 468 | 2.91 | 161 |
| 16 | 20 | 3.0 | 4.0 | 23.2 | 5.3 | 3.5 | 573 | 2.50 | 229 |
| 17 | 20 | 3.5 | 5.0 | 20.7 | 4.3 | 5.3 | 522 | 2.61 | 200 |
| 18** | 22 | 3.5 | 5.0 | 22.3 | 4.9 | 5.1 | 518 | 2.71 | 191 |
| 19 | 20 | 4.0 | 7.0 | 20.5 | 4.9 | 5.8 | 535 | 2.70 | 198 |
| 20 | 18 | 4.0 | 6.0 | 18.2 | 5.0 | 6.1 | 504 | 2.69 | 187 |
| 21 | 20 | 4.0 | 8.0 | 21.8 | 4.4 | 5.8 | 495 | 2.75 | 180 |
| 22 | 19 | 4.0 | 6.5 | 22.4 | 4.6 | 5.7 | 362 | 3.43 | 106 |
| 23 | 20 | 3.0 | 7.5 | 20.7 | 5.2 | 6.4 | 498 | 2.69 | 185 |
| 24 | 17 | 3.5 | 7.0 | 17.6 | 4.2 | 7.4 | 417 | 3.00 | 139 |
| 25 | 18 | 3.5 | 6.0 | 19.0 | 4.8 | 5.4 | 507 | 2.56 | 198 |
| 26 | 18 | 3.5 | 6.0 | 19.0 | 4.7 | 5.8 | 548 | 2.84 | 193 |
| 27 | 21 | 4.0 | 6.0 | 21.9 | 4.2 | 4.6 | 506 | 2.63 | 192 |
| 28 | 18 | 4.0 | 7.0 | 19.8 | 5.5 | 4.9 | 488 | 2.88 | 169 |
| 29 | 20 | 4.0 | 6.0 | 20.8 | 4.5 | 5.2 | 580 | 2.46 | 236 |
| 30 | 20 | 3.0 | 4.0 | 21.1 | 4.0 | 4.8 | 526 | 2.71 | 194 |
| 31 | 20 | 3.5 | 5.0 | 19.9 | 4.7 | 5.1 | 468 | 2.99 | 157 |
| 32 | 21 | 4.0 | 7.0 | 19.7 | 4.6 | 5.3 | 528 | 2.70 | 196 |
| 33 | 20 | 4.0 | 7.5 | 21.4 | 4.8 | 5.8 | 528 | 2.71 | 195 |
| 34 | 18 | 3.5 | 5.5 | 21.5 | 4.4 | 4.0 | 528 | 2.64 | 200 |
| 35 | 19 | 3.5 | 7.0 | 20.7 | 3.5 | 5.8 | 563 | 2.45 | 230 |
| 36 | 19 | 4.0 | 6.0 | 20.4 | 4.7 | 4.8 | 594 | 2.45 | 242 |
| 37 | 20 | 3.0 | 6.0 | 21.5 | 4.4 | 5.4 | 572 | 2,61 | 219 |

* The analyses were carried out in the laboratories of the Canada Department of Agriculture through the courtesy of Mr. A. H. Phillips, District Supervisor, Plant Products Division, Vancouver, B. C.

** A broiler ration.

**4) Feed efficiency and performance indices** — Two tests in which 15 and 16 rations were assayed have been chosen to illustrate the variability of chick starting and broiler rations with regard to feed efficiency (feed/gain) and performance indices:

$$\frac{\text{Average weight at six weeks}}{\text{Feed efficiency}}$$

The feed efficiency and the performance index of each ration have been related to the feed efficiency and performance index respectively of the reference rations. As in the calculation of the quality ratings from growth response a value of 100 was assigned to the feed efficiency and performance index obtained with the reference rations. The data are summarized in Tables 3 and 4.

With the chick starters, the range

based on four and six-week weights

3) Effect of strain of birds used on quality ratings
4) Feed efficiency and performance indices
5) Performance indices in relation to chemical analysis

1) **Quality of rations tested** — A quality rating for each of the rations tested was calculated from the average weights of chicks fed that ration and the average weight of chicks fed the university reference ration within the assay in which the ration in question was tested.

$$\text{quality rating} = \frac{\text{Average weight of chicks fed Ration "X"}}{\text{Average weight of chicks fed university reference ration}} \times 100$$

The frequency distribution of the quality ratings for the chick starting rations and for the broiler rations were calculated separately and are shown graphically in Figure 1. There was a much greater range in the quality of the chick starters than in that of the broiler rations. The broiler rations were for the most part of higher quality than the starter rations. Whereas only one per cent of the broiler rations had a rating of less than 75, 10 per cent of the starter rations had ratings lower than 75. Furthermore, 51 per cent of the broiler rations rated 95 or better but only 26 per cent of the starter rations were in this category. The difference in quality between the two types of ration doubtless reflects the competition that exists among feed manufacturers in meeting the demands

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**2) Comparisons of four-week and six-week results** — The quality ratings of the rations in the various tests were calculated on the basis of both the four and six-week weights of the chicks fed the rations. In Figure 2 the frequency distribution of the rations according to their quality ratings, calculated from the four-week weights, is shown. As on the basis of the six-week weights, the chick starting rations showed a greater range in quality than did the broiler rations. Of the broiler rations, 48 per cent rated 95 or over. In the case of the starter rations, 32 per cent of the rations were in this range. Conclusions regarding the general quality of commercial broiler and starter rations would consequently be similar whether based on the results of a four or a six-week assay period.

The quality rating values obtained for different rations when calculated from the four and six-week results are shown in Figures 3-6. No consistent differences are apparent between the results obtained at four and six weeks. In some of the tests the four-week values were slightly higher than those obtained at six weeks. In other tests the converse situation occurred. In very few instances was the value obtained on the basis of the four-week assay appreciably at variance with that of the six weeks' results.

**3) Effect of strain of birds used on results obtained** — Since the chicks used in assaying the broiler rations were not from a fast-growing strain, it was considered desirable to compare the response of these chicks to the response of chicks of a "meat strain." Rations 1-5 tested in Test 5539B (Figure 6) were samples from the same lots of feed indicated as Rations 1-5 respectively in Test 5539A. The chicks in Test 5539B were from a "meat strain" of New Hampshires. The relative quality ratings obtained in the two assays are shown in Figure 7. The relative order of the rations on the basis of their quality ratings was not affected by the strain of chicks on which the rations were tested. It is interesting to note that with four of the rations the more rapidly-growing strain gave slightly higher values.

Comparison was made in Tests 5547 and 5548 of the relative response to different rations of University of New Hampshire chicks and of crossbred chicks. Rations 1-5 in Test 5547 were samples of the same lots of feed indicated in Test 5548 as Rations 6, 1, 2, 14, and 11, respectively. As will be seen from Figure 7, the quality ratings for the different rations did not vary appreciably between the two strains tested. In these tests Rations 3 and 4 had the lowest quality rating. It may be significant that in the case of these two rations the quality ratings were again slightly higher when calculated from the growth response of the faster-growing chicks.

It is of interest to note the degree of uniformity in the growth rate of the chicks fed the reference rations in the various assays over the three-year period. The average weights of the chicks in the controls for each of the tests employing the University of New Hampshire chicks are shown in Table 2. Considering the fact that the tests were conducted over a period of three years, the growth rate of the chicks fed the reference rations may be considered to be fairly uniform. There was less variability in the growth rate of the chicks fed the broiler ration than in those fed the chick starter.

TABLE 5

COMPARISON OF CHEMICAL COMPOSITION OF RATIONS AND THEIR PERFORMANCE IN BIOLOGICAL ASSAYS

| | Manufacturer's Guarantee | | | Analysis* | | | Av. wt. of Chicks at 6 wks. | Feed Efficiency | Performance Index |
|---|---|---|---|---|---|---|---|---|---|
| | Protein (min.) | Fat (min.) | Fiber (max.) | Protein | Fat | Fiber | | | |
| | % | % | % | % | % | % | | | |
| 1 | 20 | 3.5 | 8.0 | 21.4 | 5.8 | 5.3 | 572 | 2.37 | 241 |
| 2 | 20 | 3.5 | 5.5 | 23.2 | 4.5 | 4.8 | 564 | 2.47 | 228 |
| 3 | 18 | 3.5 | 5.5 | 18.3 | 4.6 | 5.6 | 546 | 2.89 | 189 |
| 4 | 18 | 5.0 | 5.0 | 19.7 | 4.3 | 4.8 | 550 | 2.74 | 201 |
| 5 | 20 | 3.0 | 7.5 | 21.8 | 5.3 | 6.4 | 522 | 2.66 | 196 |
| 6 | 20 | 2.5 | 5.0 | 23.4 | 5.3 | 4.9 | 568 | 2.56 | 222 |
| 7 | 20 | 3.5 | 5.5 | 23.9 | 4.2 | 4.9 | 604 | 2.31 | 261 |
| 8 | 18 | 4.0 | 6.0 | 18.3 | 5.1 | 6.2 | 458 | 2.92 | 157 |
| 9 | 18 | 6.5 | 7.0 | 19.8 | 5.8 | 5.1 | 494 | 2.72 | 182 |
| 10 | 20 | 3.5 | 7.0 | 21.3 | 6.9 | 5.4 | 482 | 2.83 | 170 |
| 11 | 20 | 4.0 | 7.5 | 21.2 | 5.1 | 6.8 | 539 | 2.44 | 221 |
| 12 | 18 | 4.0 | 5.0 | 20.9 | 4.4 | 5.2 | 578 | 2.58 | 224 |
| 13 | 20 | 3.0 | 7.5 | 21.8 | 5.2 | 6.3 | 514 | 2.68 | 192 |
| 14 | 19 | 3.5 | 7.0 | 20.7 | 4.2 | 5.8 | 590 | 2.57 | 230 |
| 15 | 18 | 3.5 | 6.0 | 17.9 | 4.5 | 6.8 | 468 | 2.91 | 161 |
| 16 | 20 | 3.0 | 4.0 | 23.2 | 5.3 | 3.5 | 573 | 2.50 | 229 |
| 17 | 20 | 3.5 | 5.0 | 20.7 | 4.3 | 5.3 | 522 | 2.61 | 200 |
| 18** | 22 | 3.5 | 5.0 | 22.3 | 4.9 | 5.1 | 518 | 2.71 | 191 |
| 19 | 20 | 4.0 | 7.0 | 20.5 | 4.9 | 5.8 | 535 | 2.70 | 198 |
| 20 | 18 | 4.0 | 6.0 | 18.2 | 5.0 | 6.1 | 504 | 2.69 | 187 |
| 21 | 20 | 4.0 | 8.0 | 21.8 | 4.4 | 5.8 | 495 | 2.75 | 180 |
| 22 | 19 | 4.0 | 6.5 | 22.4 | 4.6 | 5.7 | 362 | 3.43 | 106 |
| 23 | 20 | 3.0 | 7.5 | 20.7 | 5.2 | 6.4 | 498 | 2.69 | 185 |
| 24 | 17 | 3.5 | 7.0 | 17.6 | 4.2 | 7.4 | 417 | 3.00 | 139 |
| 25 | 18 | 3.5 | 6.0 | 19.0 | 4.8 | 5.4 | 507 | 2.56 | 198 |
| 26 | 18 | 3.5 | 6.0 | 19.0 | 4.7 | 5.8 | 548 | 2.84 | 193 |
| 27 | 21 | 4.0 | 6.0 | 21.9 | 4.2 | 4.6 | 506 | 2.63 | 192 |
| 28 | 18 | 4.0 | 7.0 | 19.8 | 5.5 | 4.9 | 488 | 2.88 | 169 |
| 29 | 20 | 4.0 | 6.0 | 20.8 | 4.5 | 5.2 | 580 | 2.46 | 236 |
| 30 | 20 | 3.0 | 4.0 | 21.1 | 4.0 | 4.8 | 526 | 2.71 | 194 |
| 31 | 20 | 3.5 | 5.0 | 19.9 | 4.7 | 5.1 | 468 | 2.99 | 157 |
| 32 | 21 | 4.0 | 7.0 | 19.7 | 4.6 | 5.3 | 528 | 2.70 | 196 |
| 33 | 20 | 4.0 | 7.5 | 21.4 | 4.8 | 5.8 | 528 | 2.71 | 195 |
| 34 | 18 | 3.5 | 5.5 | 21.5 | 4.4 | 4.0 | 528 | 2.64 | 200 |
| 35 | 19 | 3.5 | 7.0 | 20.7 | 3.5 | 5.8 | 563 | 2.45 | 230 |
| 36 | 19 | 4.0 | 6.0 | 20.4 | 4.7 | 4.8 | 594 | 2.45 | 242 |
| 37 | 20 | 3.0 | 6.0 | 21.5 | 4.4 | 5.4 | 572 | 2.61 | 219 |

* The analyses were carried out in the laboratories of the Canada Department of Agriculture through the courtesy of Mr. A. H. Phillips, District Supervisor, Plant Products Division, Vancouver, B. C.

** A broiler ration.

**4) Feed efficiency and performance indices** — Two tests in which 15 and 16 rations were assayed have been chosen to illustrate the variability of chick starting and broiler rations with regard to feed efficiency (feed/gain) and performance indices:

$$\frac{\text{Average weight at six weeks}}{\text{Feed efficiency}}$$

The feed efficiency and the performance index of each ration have been related to the feed efficiency and performance index respectively of the reference rations. As in the calculation of the quality ratings from growth response a value of 100 was assigned to the feed efficiency and performance index obtained with the reference rations. The data are summarized in Tables 3 and 4.

With the chick starters, the range

in rating on the basis of weight only was from 78 to 104, whereas in the range on the basis of performance index the ratings ranged from 70 to 105. With the broiler rations, the range in quality rating calculated from average weights was 76 to 107. On the basis of performance index, the range was from 70 to 120. It will be noted that consideration of the feed consumption per unit of gain did not appreciably change the rank of the rations as to quality within each of the tests.

5) **Performance indices in relation to chemical analysis** — Official proximate analyses were obtained for 37 of the chick starters tested. These analyses together with the manufacturer's guaranteed analyses are shown in Table 5. The growth response, efficiency of feed utilization, and performance index obtained with each ration are also given. In nearly every instance where the official analysis was not in agreement with the manufacturer's guarantee, the difference was to the advantage of the buyer. There was considerable variation in the efficiency with which the rations were utilized. The differences that existed in the quality of the rations were more evident when the results of the assays were expressed as performance indices. The performance indices varied from 106 to 261 with an average value of 198. The data show that the performance of a ration cannot be predicted on the basis of its protein analysis. It is true that when the rates of growth obtained with two rations are compared, the ration with the high protein content will, in many cases, be found to support the faster rate of growth. Nevertheless, it will likewise be noted that growth rates may vary considerably with rations of similar protein content. In some cases comparisons of growth rates show poorer rates of growth associated with relatively high protein levels.

## Summary

**Biological assays of 114 samples of chick starter and 72 samples of broiler rations were conducted under standard conditions.**

**The quality of the rations was variable when assessed on the basis of actual chick tests.**

**A comparison of the quality ratings obtained on the basis of chick weights at four and six weeks, respectively, indicated that, in general, the values obtained are very similar and that a four-week test should be adequate.**

**When the same rations were compared using different strains of chicks the differences in quality rating were not great enough to change the relative standing of the rations within the test involved.**

**The growth rates of the chicks and the performance indices for the rations for which proximate analyses were available show that prediction of performance of a ration on the basis of chemical analysis is not sufficiently accurate.**

**Because of the complexity of modern poultry ration and the specific nutrient requirements of birds kept in confinement, more extensive use of biological assays should be made in evaluating poultry rations.**

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## Acknowledgment

This project was carried out with financial assistance from the British Columbia department of agriculture, Victoria, B. C. The authors are greatly indebted to the Hon. W. K. Kiernan, formerly minister of agriculture; William MacGillivray, deputy minister of agriculture; Harry Pope, poultry commissioner, British Columbia department of agriculture, for their interest in this project.

Some of the data in this paper were presented at the 46th Annual Meeting of the Poultry Science association, Columbus, Mo., U.S.A., August, 1957. Abstract, Poultry Science 36:1105, 1957.

## Editor's Note

The figures referred to herein by the authors were not available with the manuscript. However, the text amplifies each point. All listed tables are included.

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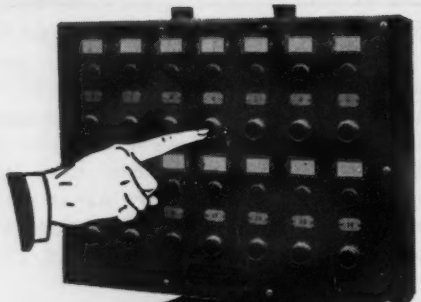

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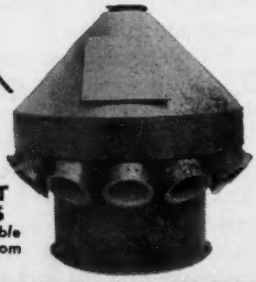

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## Name Christian Technical Adviser at Borden Co.

Lynn D. Christian has been promoted to the post of technical adviser of its special products company's feed supplements department, it has been announced by the Borden Co., New York City.

Mr. Christian joined the feed supplements department's home office in New York City in 1955. Prior to that, he served as field service nutritionist at Borden's nutritional research laboratory in Elgin, Ill.

He is an alumnus of Pennsylvania State University, where he took his bachelor's and master's degrees in animal husbandry. A veteran of the army, Mr. Christian served during Wold War II and the Korean conflict.

# Dr. Stokstad Is Cyanamid Ag Research Director

Appointment of Dr. E. L. R. Stokstad as director of research for its agricultural division has been announced by American Cyanamid Co., New York City. He has been with the firm since 1941.

Dr. Stokstad was the first scientist to establish the growth-promoting effect of anti-

CYANAMID'S STOKSTAD

biotics on animals, Cyanamid said. He also reportedly discovered vitamin K in collaboration with another scientist.

Among his other studies have been the effect of vitamin $B_{12}$ in curing pernicious anemia, the necessity of selenium as a dietary nutrient for several animals, and the isolation of folic acid.

Prior to his appointment as research director, Dr. Stokstad was director of the animal research department. He has coauthored 134 published articles on nutritional subjects and was the senior author of 47.

*A new Honeggers' dealer is T & J Produce, Fond du Lac, Wis.*

*A Big H four-way franchise was awarded recently to McClure (Ill.) Milling Co.*

*Gibbon (Neb.) Feed Mill recently installed a new Blue Streak mixer.*

### RED COMB REALIGNS

Promotion of Orvel H. Cockrel to the post of marketing manager and appointment of Alex Gordeuk as manager of the poultry feeds department have been announced by Hales & Hunter Co., Chicago. A centralization of sales department authority and responsibility was also announced.


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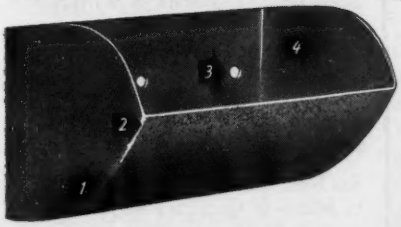


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CALUMET CUPS

## Senate Will Probe CCC, Grain Industry: Oliver

A prediction that a senate investigating committee will probe into all phases of Commodity Credit Corp.'s operations with the grain trade was expressed by Alvin E. Oliver at the summer convention of the Indiana Grain & Feed Dealers association.

The executive vice president of the Grain & Feed Dealers National association told his audience that grain storage costs, CCC price-support policies, and domestic and foreign sales programs will be included in the investigation.

He urged all warehousemen to know the Uniform Grain Storage agreement contract and rate schedule thoroughly, and added that "the metropolitan press have quoted inaccurate rate information from warehousemen."

The cost of storage programs is of newsworthy interest to urban daily newspapers and to general magazines, he said. "Unfortunately, the story is not always told that congress-passed farm programs have competed against grain merchandisers," Mr. Oliver stated.

Some congressmen and producers are telling reporters that the growing feed industry has caused overproduction and low prices; individual producers, who would like egg price supports, Department of Agriculture egg-purchasing programs for shelled eggs, and a desire to purchase CCC-owned grain at bargain prices, are happy to pass the blame to the feed industry, he concluded.

## Alexander Heads Sales of Paper Bags for Chase

Appointment of Eugene P. Alexander as sales manager of its paper bag division has been announced by Chase Bag Co., New York City. Mr. Alexander was formerly sales office manager in Chicago.

He joined the firm in 1948 as a sales representative. The navy veteran served in Cincinnati and Detroit. He will headquarter in New York City in his new capacity.

E. P. Alexander

W. J. Gosney

Succeeding Mr. Alexander as Chicago sales office manager is William J. Gosney. The University of Missouri alumnus has been with Chase 10 years, and has served in Kansas City, Buffalo, Pittsburgh, and Chicago.

## Higher Posts to Grant, Peterson at Wirthmore

Appointment of Harry A. Grant as director of agricultural relations and Lawrence L. Peterson as director of poultry sales and service has been announced by Wirthmore Feeds, Inc., Waltham, Mass.

Mr. Grant has been with the firm since 1940. For the past several years he has served as director of poultry sales and service. In his new capacity, he will work with government agencies and private groups throughout Wirthmore's 17-state area of distribution.

Mr. Peterson joined the company in 1954, having previously served as assistant sales manager for the former Kasco Mills, Inc. The Washington State College alumnus has been serving as assistant sales manager and administrative assistant in Wirthmore's sales department.

## Merck Cuts Lysine Cost To $4.75 Per Pound

The price of its lysine monohydrochloride has been reduced 17½ per cent, according to Merck & Co., Inc., Rahway, N. J. New price is $4.95 per pound for 25 and 100-pound drums.

The new price is the second reduction made by Merck this year. In late March, the cost dropped from $8 to $6 per pound.

*Salona Feed & Supply, Salem, Ohio, recently installed a new Blue Streak hammer mill.*


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# Pet Foods

## Valor, Superstition In Dog's History

**Many American families which were not dog owners previously have purcased canines for family pets largely as a result of their children admiring dogs which appear as heroes or heroines in television programs. Dogs also play key roles in consumer advertising, and many are heavily-insured to protect their careers and the livelihoods of their owners.**

BARON & LADY WOLFSCHMIDT

The key dog on which Greyhound Corp. bases its internationally-known symbol is insured for $300,000. At her current weight, Lloyds of London has insured her at the rate of $4,000 a pound. An invaluable collie named Lassie (who'd more correctly be called Laddie) earns $1,000 a week. Two canine aristocrats — Baron and Lady Wolfschmidt, who quite aside from their lucrative work posing for Wolfschmidt Vodka ads — have spread their fame by letting themselves be admired on camera by such stars as Perry Como, Gary Moore, Jackie Gleason, Dave Garroway, Ernie Kovacs, and Steve Allen.

Ever since some clever Neolithic hunter discovered that a certain kind of wolf could be trained to help him hunt, the dog has been a highly valued companion to man. But not until a handsome German shepherd named Rin Tin Tin hit the movies in the 1920's and began to receive a million fan letters a year did dogs get the royal treatment.

In between, man's best friend has been used to get him food, sales — even rain! Any animal who can do all that deserves to be the center of some solid superstitions. And the dog is.

### Dog Dogmas

The Eskimos, for example, once believed that any dog could turn into a dashing young man at night — providing the maiden destined for him was brave enough to kiss him in his canine form.

Canine-liness is just below holiness, the ancient Greeks believed; they kept sacred dogs that were supposed to heal patients by licking them. In Kumaon, dogs were believed to be special pets of the gods and were purposely deprived of water during severe droughts. Their thirsty howling, it was reasoned, would arouse heavenly pity — and rain.

Over the centuries, many dogs have made reputations for themselves. Alexander the Great is said to have founded a city called Peritas in memory of a favorite dog of that name. In his book, Natural History, the Roman historian Pliny tells the story of a dog that brought to justice the murderer of its master, Montargis. Having witnessed the crime, the dog visited the murderer's home every night for weeks and whimpered. Unable to catch the dog, the assassin — close to insanity — confessed everything to the authorities.

Perhaps the most heroic dog of all time was Balto, the Alaskan husky who plodded through more than 75 miles of raging blizzard to deliver the necessary serum that saved several lives. A staute to the intrepid canine stands today in New York's Central park.

One of the most uniquely talented dogs is surely Rolf, an 11-year-old German shepherd that lives on the Danish island of Funen. His special gift: finding things. Over the past eight years, Rolf, working under the direction of his owner, Svend Andersen, has discovered over $400,000 worth of missing jewelry, currency, securities, musical instruments, tools, clothing, cows, pigs, even other dogs. His exquisitely-sensitive nose has unearthed these things on metropolitan streets, country paths, encased in ice, buried underground, floating on rivers, mired in bogs. Rolf's fees are modest, averaging about 30 crowns a job ($4). But he's called on about 700 cases a year and solves over 80 per cent of them. Be-


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QUALITY DOG FOOD INGREDIENTS

sides, there's no competition, for Rolf is usually resorted to after all human resources are exhausted — newspaper ads, police, private investigators.

The almost universal affection for dogs has made a chosen few ace salesmen — symbols for a famous record company, a major bus line, and of course, many brands of dog food.

Most aristocratic of all are the two beautiful Borzois, commonly called Russian wolfhounds, that serve as good will ambassadors for Wolfschmidt Vodka.

Russian Wolfhounds can boast a lineage and ancestry going back several centuries to the time when they were first bred by the Czars to hunt the ferocious wolves that ranged over the plains and steppes. In breeding the dogs for this purpose, the qualities most sought were endurance, strength, and speed. With time, increasing settlement of the country lessened the need for hunting wolves, but Russian noblemen continued to prize the wolfhounds.

Baron and Lady Wolfschmidt are two wolfhounds that lead particularly interesting lives.

As befits their station in life, Baron and Lady lead the "good life."

They have hearty appetites, sticking to a high-protein diet which helps them keep slim and svelte. For breakfast they have six egg yolks each, a can of evaporated milk, and buttered toast; lean meat and crackers for lunch; four or five pounds of meat for dinner and a "nightcap" of some vitamin B capsules.

When traveling, they carry such things as blankets, dusters, rain coats, sweaters, and several collars. Last year, Lady was given a Cerulean mink collar, but unfortunately she chewed it up.

**Pet food manufacturers, fortunately, aren't catering solely to canine prima donnas. Many of their patrons — the dogs, that is — rely on and relish the excellent quality dog foods made by members of the American feed industry.**

*A Honeggers' four-way franchise was recently awarded to Clark & Laughman Feed Service, Covington, Ohio.*

## Purina Dog Care Center Undergoing Expansion

Now under construction is an addition to its dog care center at Gray Summit, Mo., it has been announced by Ralston Purina Co. The kennels are already one of the largest in the United States, according to Dr. Roland M. Bethke, Purina research vice president.

The new addition includes a T-shaped building 120 feet long, with an 86-foot center wing. Expected to be completed in August, the new unit will permit an increase in the amount and kind of research work now being conducted.

The center, which opened in September, 1958, includes a metabolism division for measuring dogs' energy requirements; maternity pens where nutritional requirements of gestation, reproduction, and lactation are studied; clinic facilities; a diet laboratory; and 104 outdoor runs, each with an indoor pen.

*Jasper County Farm Bureau, Rensselaer, Ind., recently installed a new Blue Streak mixer and Prater corn breaker.*

**FRISKIES APPOINTEE**

New advertising manager of the pet foods division of the Carnation Co. is B. C. Flounders. The Dartmouth College and Tuck school of business administration alumnus was previously associated with the Kendall Co. and Scott Paper Co.


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Write DIAMOND V MILLS, Inc.
CEDAR RAPIDS, IOWA

## Top Fish Derby Awards Go to Horst, Mattson

Here are members of the Nestor Falls (Ontario) fishing party, which annually tries its luck in Lake of the Woods waters. The group, which consists mostly of feed men, has been together each year for 10 years.

From the left and kneeling are George Sheldon, Burlington, Wis.; E. H. Sather, New Richmond, Wis.; Ed Horst, Chicago; W. T. Diamond, Chicago; and Bruce W. Smith, Milwaukee.

Standing are Fred Gabrielson, Milwaukee; William O'Connor, Minneapolis; Paul Mattson, Chicago; C. J. Basten, New Franken, Wis.; Robert Spitzer, Burlington; Ben Free, Milwaukee; Cliff Scott, Minneapolis; Erwin Julien, Milwaukee; Al Uebele, Burlington; Walter B. Griem, Madison, Wis.; William Rothermel, Chicago; Ray Kaercher, Watertown, Wis.; Charles Barr, Ames, Iowa; A. A. Cavey, Des Moines; Don Guptill, Genoa City, Wis.; Bob White, Des Plaines, Ill.; and Damon Catron, Ames.

In the three-day fishing contest, June 5-7, Mr. Horst took the prize of the largest northern and Mr. Mattson took honors in the walleye class.

## Raymond Bag Division Earns Safety Award

Compiling a man-hour safety record which is less than one-third the average for the bag industry has earned a special safety award for the manufacturing plant of Raymond Bag Corp., Middletown, Ohio.

Raymond recorded a total of 723,676 man-hours with only two disabling injuries which resulted in 34 days lost time. The accident frequency rate was 2.76 days per million man-hours worked. The award was presented by Albemarle Paper Mfg. Co., Raymond's parent firm.

### CORRECTION

A news item which appeared in the May issue of The Feed Bag stated that the annual capacity of Kent Feeds, Inc., is 40,000 tons. The item should have stated that the Muscatine (Iowa) firm has increased its yearly output by 40,000 tons to a total of over 200,000 tons.

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## Roesler New Director of Badger 4-H Foundation

Eldon H. Roesler, publisher of The Feed Bag and executive secretary of the Central Retail Feed association, has been elected a director of the Wisconsin 4-H foundation. He joins James H. Murphy and E. J. Cashman as feed industry members on the board.

The Wisconsin section of the 4-H body supervises Camp Upham Woods near Wisconsin Dells and also functions in many other ways in conjunction with 4-H member projects.

*A new Blue Streak hammer mill was installed recently at Gifford (Ill.) Elevator.*

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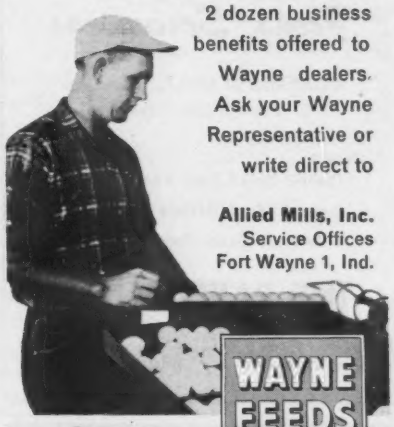


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### CYANAMID APPOINTEE

Appointment of Dr. William McKay to the newly-created position of agricultural scientific coordinator, European region, for Cyanamid International has been announced by American Cyanamid Co., New York City. Dr. McKay was formerly associated with Cyanamid of Great Britain, Ltd.


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## AFMA Dairy Award Goes To Dr. Harry Conrad

Dr. Harry R. Conrad of the Ohio agricultural experiment station has been selected by the American Dairy Science association to receive the first 1959 American Feed Manufacturers association $1,000 award for outstanding contribution to nutrition research.

Dr. Conrad, a worker in the field of dairy cattle nutrition, has done research on calcium and phosphorus metabolism in which cows were fed large doses of vitamin D to prevent milk fever. He has also studied the rumen function of the dairy calf.

The researcher has also dealt with bloat, anemia in calves, and protein metabolism in dairy cows. He attended the University of Kentucky and Ohio State University and has been a member of the dairy science staff at the Ohio station since 1952.

Two more $1,000 awards will be made this year to researchers by AFMA. The recipients will be selected by the Poultry Science association and the American Society of Animal Production.

## IMC Reorganizes Three Divisions Into One

A major realignment of its principal product divisions has been announced by International Minerals & Chemical Corp., Skokie, Ill. The change consolidates three top divisions into the agricultural chemical division.

The move was made to meet the needs of changing markets and customer requirements revealed in a full-scale survey of the fertilizer industry, the firm said.

The potash and phosphate divisions have been combined. Last fall, the phosphate chemicals and phosphate minerals operations were combined as an interim step.

Nelson C. White, vice president of the potash division, has been appointed vice president in charge of long-range planning for agricultural chemicals. George W. Moyers, vice president of the phosphate division, is now vice president and special assistant to the president on agricultural chemicals assignments.

*Now handling the complete line of Honeggers' products is Hall's Glendary Farm Supply, Albert Lea, Minn.*

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### MACHINERY FOR SALE

**HAMMER MILL—Has 50 HP motor—used only short time. Like new. Bargain for cash. Write BA-120, c/o The Feed Bag.**

**ONE 14-40 grinder with or without motors; one 17-40 grinder with or without motors, factory rebuilt guaranteed equivalent to new. These are replacement machines for larger units. D. E. Hughes Co., Hopkins, Mich.**

**FEED MIXER—One ton capacity—floor level feed has motor—latest style machine—used short time. Write K-D-15, c/o The Feed Bag.**

**FOR SALE—New or used 80600E or 80600H sewing machine heads, Whizzer conveyors, bagging scales and bins. Write Winborns, Williamsburg, Iowa.**

**CORN CUTTER—grader—polisher—aspirator, 3,000 lbs. per hr. A-1 condition, guarantee. Write LE-21, c/o The Feed Bag.**

**FOR SALE — One Daffin mobile mill unit, priced to sell. Mounted on 1957 Chevrolet truck. Hours run on diesel motor 1,536. Inquire at Ray Wagner Feed Mill, Owen, Wis. Phone 168.**

### EQUIPMENT FOR SALE

**FOR SALE — One Clipper No. 27 cleaner, with constant feed hopper and slurry treater. 18 months old, six screens $500. S. G. Sorenson & Sons, Inc., Tomah, Wis.**

**SALE: Dewatering presses, Davenport numbers 1A, 2A, and 3A, Louisville eight-roll 36 inches. Aluminum tank, 3,000, 18,000 gallon. Louisville rotary steam tube dryers, six feet by 50 feet, six feet by 25 feet. Bucket elevator, screw conveyor, trough conveyor, etc. Perry, 1410 N. Sixth st., Philadelphia 22, Pa.**

**FOR SALE — One Clipper No. 6 cleaner, with about 20 screens. Excellent condition, $200. S. G. Sorenson & Sons, Inc., Tomah, Wis.**

### HELP WANTED

**CENTRAL OHIO grain, feed, seed farm supply company wants experienced salesman. Must be able to buy from as well as sell to farmers. Former resale experience would be helpful. A 27-year-old company, privately owned. Supply photo, experience, and details covering yourself. Russells, Hilliards, Ohio.**

**SALESMAN — for a leading mineral-vitamin supplement manufacturer in California and Arizona. Prefer man with knowledge of feeds and feeding and familiar with California feed industry. Excellent opportunity for the right man. Reply to Box 659, The Feed Bag.**

### WANTED TO BUY

**WANTED — Jacobson No. 8 hammermill with or without 100 horsepower 440 EP motor. Michael Wood Products, Inc., Garfield, N. J.**


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**Feed Ingredients of All Kinds**
**North East Feed Mill Company**
**Minneapolis 13 Minnesota**


## Sylvester Meyers Named As CSS Sales Manager

Appointment of Sylvester J. Meyers as general sales manager of Commodity Stabilization service has been announced by Secretary of Agriculture Ezra Benson. He succeeds the late Frank C. Daniels, who died last March.

Mr. Meyers will also serve as vice president of Commodity Credit Corp. and as special adviser to the CCC board of directors. He has a wide background in the grain industry, and was at one time president of the Chicago Board of Trade.

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*I'd Rather Go on a Picnic With Her Than Eat*

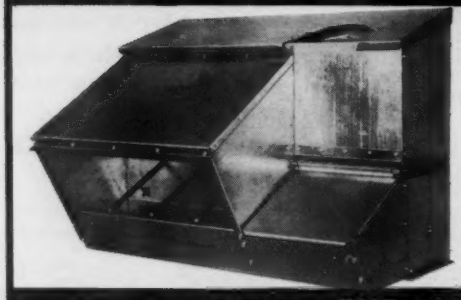
## Largest CSC Sales Meet Is Held in Chicago

What was termed the largest sales meeting in the history of Commercial Solvents Corp.'s animal nutrition department was held recently in Chicago, it has been announced by the New York City firm.

The meet was presided over by I. Roy Cohen, CSC sales manager, shown standing at one of the charts used to describe sales advantages of Baciferm.

Others in attendance were company officials, sales managers, animal nutrition salesmen, and representatives of the research, technical service, quality control, and market departments. Also present was M. C. Wheeler, president of the firm.

**PORKER PROFIT POINTERS**



Hog raisers like PREMIER equipment. And dealers make money selling PREMIER equipment. This #SC-36 Sow-Creep feeder, for example, is built to last. Heavy galvanized steel. Feed flow easily controlled. Plus a complete line of PREMIER hog equipment. Raisers can use the Premier Purchase Plan. Low initial investment. Write for details.

**PREMIER** THE NATIONAL IDEAL CO. Toledo 6, Ohio


## Albers Acquires New Mill In Arkansas Broilerdom

A new mill has been acquired on a lease-purchase arrangement by Albers Milling Co., Los Angeles. The mill is located at Fort Smith, Ark.

Production capacity is 75 tons a day, with both mash and pelleting facilities. Jack Bratten will direct operations, with Floyd Thorman acting as branch manager.

Plans are being made for expanding both the warehousing and bulk facilities, with land having already been purchased for that purpose. The mill is intended to supplement Albers facilities in Kansas City.


You'll move more bales!

**You'll make more** With **J-MTC** Binder & Baler TWINE

**TOP QUALITY!** Only Grade "A" Sisal, grown under ideal conditions in Yucatan, Mexico. Fibres combed 8 times to assure uniform length, strongly woven, "sheared" to eliminate tow-burr and treated to repel moisture, insects, rodents. Unwinds without twisting or collapsing. Baler twine is knotless.

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Cylinders bagged in waterproof Kraft paper, securely bound — 6 cylinders to 50-lb. bale of binder twine: 2 balls to 40-lb. baler twine bale.

**LIBERAL PROFIT MARGINS** assured by J-MTC mass production economies passed on to you. J-MTC twines are no-work items that sell themselves. Check our prices today and order NOW for prompt or later shipment.

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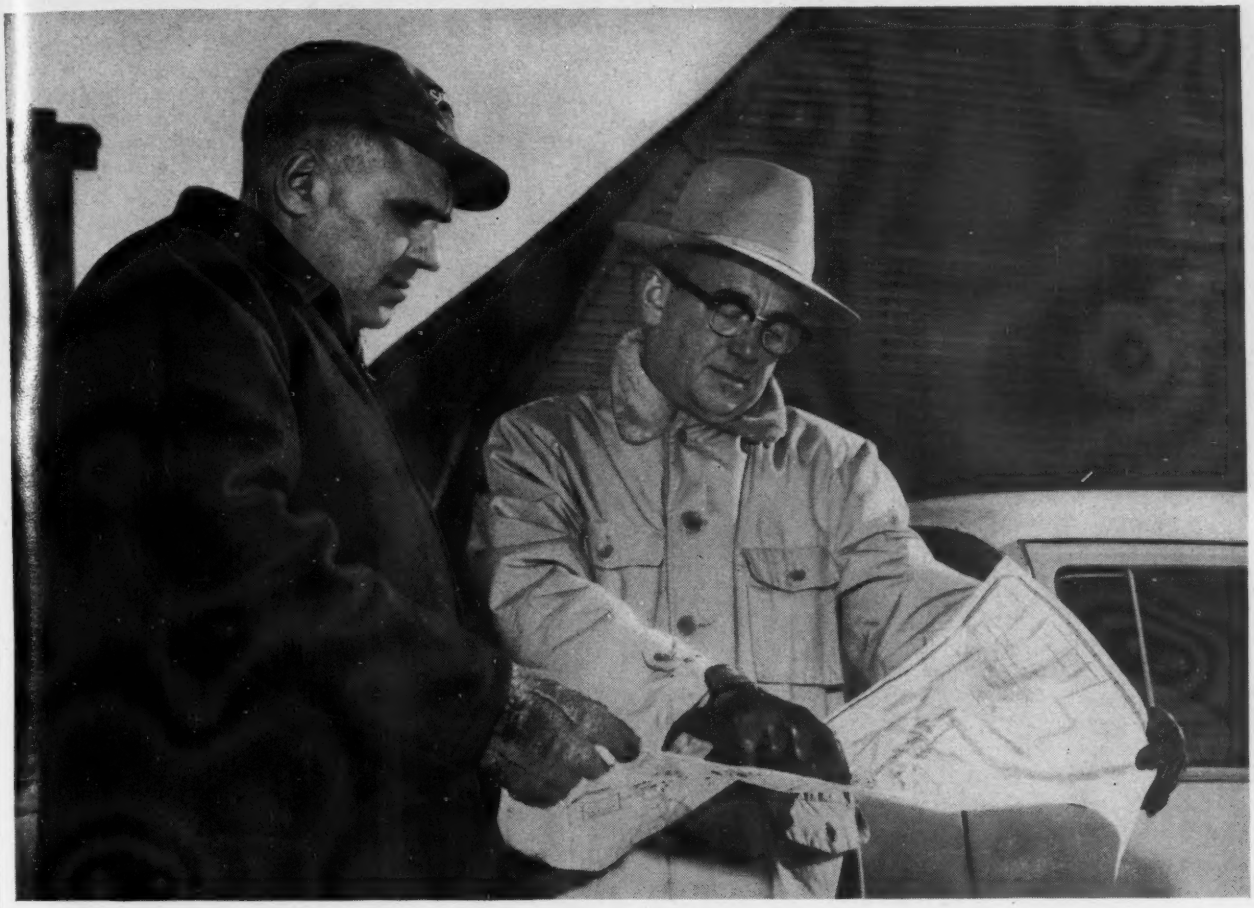

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When you extend your sales effort out into the feedlot you can expect to get more new customers, more repeat customers, and more new profits from your feed business. Now, you can do this with the sales help of your Murphy-man. He will make farm calls with or for you regularly, and every feed sale he makes in your trade area will go through your dealership.

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**Get free sales training for your employees** . . . Your employees will sell more when they know how to sell. A trained sales staff means better service for your customers, and more business for you. Your Murphy-man will be glad to set up a regular sales training program.

Add the Murphy-man to your sales staff, soon. His help can make a *big difference* in your business. For further information, write the Murphy Products Company, Burlington, Wisconsin.

New customers...new business...new profits with **MURPHY'S**

MURPHY PRODUCTS COMPANY, BURLINGTON, WISCONSIN

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